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Analysis of LDV and LDT Non-Methane HC Standards

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16. ABSTRACT

This report describes the analysis performed by the Test and Evaluation Branch to support the 1983 and later model year LDV and LDT non-methane HC regulations being considered by the Standards Development and Support Branch. This analysis examined the air quality impact of such a standard in both low and high altitude non-California areas under the presence and absence of inspection and maintenance (I/M). Four unique control strategies were examined for each altitude and I/M combination.

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Introduction

This report describes the analysis performed by the Test and Evaluation Branch to support the 1983 and later model year LDV and LDT non-methane HC regulations being considered by the Standards Development and Support Branch. This analysis examined the air quality impact of such a standard in both low and high altitude non-California areas under the presence and absence of inspection and maintenance (I/M). Four unique control strategies were examined for each altitude and I/M combination. These four strategies are as follows:

1) The LDV and LDT total HC standards assuming a 15 percent methane fraction of total hydrocarbons from the catalyst equipped vehicle types.

2) The LDV and LDT total HC standards assuming a 30 percent methane fraction of total hydrocarbons from the catalyst equipped vehicle types.

3) The LDV and LDT non-methane HC standards assuming a 15 percent methane fraction of total hydrocarbons from the catalyst equipped vehicle types.

4) The LDV and LDT non-methane HC standards assuming a 30 percent methane fraction of total hydrocarbons from the catalyst equipped vehicle types.

A total of sixteen runs resulted from the four strategies being analyzed at low and high altitudes, with and without I/M.

This report is presented in two parts. The first part presents the analysis performed to estimate non-methane HC emissions from the highway mobile sources while the second part presents the assumptions and results of the air quality assessment.

1. Highway Mobile Source Non-Methane Emissions

This part presents the analysis performed to estimate the non-methane HC emission levels. The analysis performed is described in four sections. The first section presents the scenario information used to run the MOBILE2 computer program[1]. Section two details how MOBILE2 and the basic emission rates were modified to perform the analysis[2]. Section three describes in detail the four strategies examined, and section four presents the MOBILE2 results.

1.A. General MOBILE2 Scenario Information

In total, 16 runs were performed with a modified MOBILE2 program: Eight runs for the low altitude non-California region and eight runs for the high altitude non-California region. Each region had four I/M and four non-I/M runs performed. Each run examined only highway mobile source non-methane HC emission levels (in grams per mile). Also, each run

projected the emission levels for calendar years 1979, 1982, 1983, 1985, 1987, 1988, 1990, 1995, and 2000. Finally, each run was performed such that only the basic exhaust emission levels were output. That is, all correction factors were assigned such that they would have no effect on the emission results.

For the runs that included the benefits of I/M, the characteristics of the I/M programs assumed are as follows:

1) The I/M programs begin on January 1, 1982.

2) The LDGT and pre-1981 LDGV I/M stringency rate is 30 percent.

3) The I/M programs have a functioning mechanics training program.

4) All 1968 and later model year vehicles and trucks are affected by the I/M programs.

5) The LDGV, LDGT1, and LDGT2 vehicle types are tested in the I/M programs.

6) There is a 70 percent identification rate for the 1981 and later model year LDGVs.

1.B. MOBILE2 Modifications

MOBILE2 was modified in three areas to perform the runs necessary for the LDV and LDT non-methane HC regulations:

1) I/M technology groups,

2) Non-methane fractions, and

3) Alternate emission rates for various model years and vehicle types.

The I/M subprograms were altered to increase the number of technology groups from three to five. Also, the subprograms were altered to redefine, by vehicle type, the I/M credits used. The following technology group definitions were used in this analysis:

1) Technology 1: Pre-1975 LDGVs, pre-1975 LDGT1s, and pre-1979 LDGT2s.

2) Technology 2: 1975-1980 LDGVs, 1975+ LDGT1s, and 1979+ LDGT2s.

3) Technology 3: Undefined.

4) Technology 4: 1981 LDGVs.

5) Technology 5: 1982 LDGVs.

6) Technology 6: 1983+ LDGVs.

Alternate I/M credits were used in the various I/M runs to accredit the emission rate and technology differences between this analysis and those in MOBILE2. Appendix A presents the alternate I/M credits used for the different strategies.

The non-methane fractions were altered in this modified version of MOBILE2. The following MOBILE2 changes were made for the four strategies defined in the introduction:

1) For strategy types one and three, the non-methane fractions were changed to 0.85 for the 1975+ LDGVs, 1975+ LDGT1s, and 1979+ LDGT2s.

2) For strategy types two and four, the non-methane fractions were changed to 0.70 for the 1975+ LDGVs, 1975+ LDGT1s, and 1979+ LDGT2s.

Except for the 1983+ LDGV and LDGT emissions, other low altitude model year and/or vehicle type emissions differ from those in MOBILE2 as a result of expected changes in regulations, technology mix, and/or emission data. The emissions from the 1981 and 1982 LDGVs are different from those in MOBILE2 as a result of an expected change in the technology mix. The emissions from the 1979 through 1983 HDGVs are different from those in MOBILE2 as a result of more current emission information. The 1984 and later HDGV emissions are different from those in MOBILE2 due to expected changes in the SEA regulations and technology mix. In MOBILE2, the low altitude HDGV technology mix is assumed to be 100 percent oxidation catalyst in the 1984 model year and 100 percent threeway catalyst in the 1985 and later model years. In this analysis, no catalyst system was expected to be used on the HDGVs. The 1984 and later HDDV emissions deviate from those in MOBILE2 as a result of the assumed changes in the SEA program.

Similarly, some high altitude model year and/or vehicle type emissions differ from those in MOBILE2 as a result of changes in regulations, technology mix, and/or emission data. For the most part, the high altitude emission rates change as a result of the changes to the low altitude vehicle types. However, both the 1984+ LDDV and LDDT emissions change since the emission standards assumed are different between this analysis and MOBILE2. MOBILE2 assumed these vehicle type emission standards would equal their corresponding low altitude vehicle type emission standards. The proportional emission standards were assumed for this analysis. The emission rates resulting from the deviations between MOBILE2 and this analysis quoted above are given in Tables 1 and 2.

Except for the emissions from the 1983 and later LDGVs and LDGTs, the emissions given in Table 1 are used in every low altitude strategy. Similarly, the emissions given in Table 2 are used in every high altitude strategy, except for the 1983+ LDGV and LDGT emissions.

1.C. Strategies of Analysis

Four strategies were examined in this analysis. These four strategies will be discussed below in four subsections. Each subsection will discuss for the low and high altitude region the basic exhaust emission rates, emission standards, SEA program, useful life definition, and

technology mix for the 1983 and later model year LDGVs and LDGTs. These five components are summarized in Table 1 for all low altitude strategies and Table 2 for all high altitude strategies.

1) Strategy One - Total HC Standards with 15 Percent Methane

This strategy assumes the total HC emission standards for the 1983 and later model year LDVs and LDTs, and a 15 percent methane fraction of total hydrocarbons from all catalyst equipped vehicles and trucks. For low altitude areas, these standards are 0.41 grams/mile for the 1983+ LDGVs, 1.7 grams/mile for the 1983 LDGTs, and 0.8 grams/mile for the 1984+ LDGTs. This strategy also assumes a 40 percent AQL SEA program for the LDGVs and LDGTs, a full useful life definition for the 1984+ LDGTs, but a one-half useful life definition for the LDGVs and pre-1984 LDGTs.

For high altitude areas, the total hydrocarbons emission standards are 0.57 grams/mile for the 1983+ LDGVs, 2.0 grams/mile for the 1984+ LDGTs and 1.0 grams/mile for the 1984+ LDGTs. The high altitude runs also assume no high altitude specific SEA programs. But the runs do assume a full useful life definition for the 1984+ LDGTs, and a one-half useful life definition for the 1983 and later LDGVs and 1983 LDGTs.

The technology mix for the 1983+ LDGVs assumes that 5.3 percent of the fleet are closed-loop throttle body injected, 57.9 percent of the fleet are closed-loop carbureted, and 36.8 percent of the fleet are open-loop carbureted. The 1983+ LDGTs were assumed to remain with the oxidation catalyst technology instead of receiving a threeway catalyst system in 1985.

2) Strategy Two - Total HC Standards with 30 Percent Methane

This strategy assumes the total HC emission standards for the 1983 and later model year LDVs and LDTs, and a 30 percent methane fraction of total hydrocarbons from all catalyst equipped vehicles and trucks. The emission rates, standards, SEA program, useful life definition, and technology mix assumptions for strategy two are identical to those in strategy one. The difference between the two strategies is the non-methane fraction for catalyst equipped vehicles and trucks. The non-methane fraction changes from 0.85 to 0.70 for 1975+ LDGVs, 1975+ LDGT1s, and 1979+ LDGT2s.

3) Strategy Three - Non-Methane HC Standards with 15 Percent Methane

Strategy three assumes the non-methane HC emission standards for the 1983 and later model year LDVs and LDTs, and a 15 percent methane fraction of total hydrocarbons from all catalyst equipped vehicles and trucks. Only the standards and (subsequent) emission rates for the 1983+ LDGVs and LDGTs change in this strategy versus strategy one. The non-methane HC emission standards for vehicles operated at low altitude are 0.39 grams/mile for the 1983+ LDGVs, 1.6 grams/mile for the 1983 LDGTs, and 0.76 grams/mile for the 1984+ LDGTs. For high altitude areas, the non-methane HC emission standards are 0.54 grams/mile for the 1983+ LDGVs, 1.9 grams/mile for the 1983 LDGTs, and 0.95 grams/mile for the 1984+ LDGTs.

4) Strategy Four - Non-Methane HC Standards with 30 Percent Methane

This fourth strategy assumes the non-methane HC emission standards for the 1983 and later model year LDVs and LDTs, and a 30 percent methane fraction of total hydrocarbons from all catalyst equipped vehicles and trucks. The difference between strategies three and four are the non-methane fractions, and the 1983+ LDGV and LDGT emission rates. Once the methane fraction is accounted for, both strategies three and four have equivalent emission rates for the 1983 and later light duty gasoline powered vehicles and trucks.

1.D. MOBILE2 Output

Table 3 through 18 present the MOBILE2 results for all sixteen runs performed for this analysis of non-methane HC emission standards on 1983 and later model year LDGVs and LDGTs. Tables 3 through 6 present the MOBILE2 results assuming I/M for the four strategies evaluated for all low altitude non-California areas. Tables 7 through 10 present the MOBILE2 results assuming no I/M for the four strategies evaluated for all low altitude non-California areas. Tables 11 through 14 correspond to the MOBILE2 with I/M results for all high altitude areas. Tables 15 through 18 give the high altitude results assuming no I/M.

The second part of this report presents the assumptions and results of the air quality assessment.

2. Air Quality Models

The Empirical Kinetic Modeling Approach (EKMA) was used to estimate the future ambient ozone concentrations. EKMA reflects the fact that the relationship between oxidant air quality and emissions is a complex one involving chemical reactions between non-methane hydrocarbons (NMHC) and oxides of nitrogen (NOx) in the presence of sunlight. The isopleth curves shown in Figure 1 describe the relationship used in EKMA between the maximum hourly afternoon ozone level and the concentration levels of the precursors NMHC and NOx. These curves have been calibrated primarily with smog chamber data.[3]

2.A. Inventories

The National Emission Data System (NEDS) provided the basic inventory estimates for both the low altitude, 49-state and the high altitude urban areas listed in Tables 19 and 20.[4] The base year inventory used in this analysis is for 1978. NEDS provides estimates for both mobile and stationary emission sources. However, since the highway mobile source portion of the current NEDS inventory used, at the time of this analysis March, 1978 emission factors (MOBILE1), the mobile source portion of the inventory was adjusted for the more recent emission factors contained in MOBILE2.[5] Stationary area source emissions however, were obtained directly from NEDS.

Since peak ozone concentrations result from chemical reactions that generally culminate some distance from the original precursor emissions,

the total tonnage of NMHC emitted within the entire Air Quality Control Region (AQCR) was used to characterize each urban area. Appendix B contains this adjusted 1979 inventory.

2.B. Source Contribution Factors

A source contribution factor is designed to account for stack height and distance between an emissions source and the ambient monitor. Since ozone is a secondary pollutant that results from the interaction of NMHC and NOx, it is generally considered a regional rather than a local problem. Therefore, all ozone precursor sources, including stationary point source emissions, are fully counted.

2.C. Design Values

Design values are measured ambient air quality concentrations from which future concentrations are predicted. The data are generally collected by the states and entered into the Storage and Retrieval of Aerometric Data (SAROAD) system maintained by EPA. Design values are calculated from those data in a manner that conforms to the NAAQS for the pollutant and urban area under study. The ozone standard, is expressed as a daily maximum one hour concentration in the worst year of record. For this analysis design values for 1979 were used. Summaries for the low and high altitude values are given in Tables 21 and 22.

2.D. Background Levels

Background levels refer to natural background ambient pollutant concentrations that are the result of emissions from natural sources, such as decaying vegetation, forest fires, and lightning. All man-made sources are specifically excluded from this classification, even if the man-made pollution originating from sources outside of the study area is transported into the area by repetitive weather patterns. Normally, natural background sources of ozone contribute a negligible amount to the ambient concentrations measured at urban monitoring sites. In this analysis, natural background levels were assumed to be zero. This is in keeping with recent EPA guidance.[7], [9]

2.E. Stationary Source Control

NMHC emissions from stationary sources contribute to ozone formation through a reaction with NOx. New source performance standards (NSPS) and reasonably available control technologies (RACT) are two strategies that exist to control many of these sources.[6] A summary of the control efficiencies assumed for each source is contained in Table 23. Control ranges from zero percent for miscellaneous area sources and fuel combustion to as high as 90% for sources in the petroleum industry. The "no control" case is numerically expressed as a zero efficiency level.

2.F. Growth and Retirement Rates

Table 23 also indicates the stationary source growth and retirement rates assumed. The retirement rate is essentially a scrappage rate, that is, the rate at which old equipment is retired and replaced by new equipment.[6]

Growth rates express the expected increase in usage associated with each pollution source. The growth rates assumed to apply in this analysis are listed in Table 23. Heavy duty gasoline and diesel truck rates and the motorcycle growth rate were derived directly from the Methodology to Conduct Air Quality Assessments[6]. All of the stationary source growth rates also came from that publication. The growth rate of non-highway mobile sources is an approximate average of the rates listed for separate categories. The light duty passenger vehicle fleet growth rate was derived from the data presented in the "Automotive Fuel Demand" paper [9] using the methodology presented in the Assessments reference. The two sets of calculations (Assessments versus Table 23) differ only in that the Assessments reference computes an annual growth rate based on the differences between 1977 versus 1990 vehicles miles traveled (VMT) estimates, whereas the rates listed in Table 23 are based on 1977 to 1995 VMT levels. The effect of this change is to lower the annual compound growth rate. Finally, the growth rate of light duty trucks was assumed to be the same as that for light duty vehicles.

2.G. Emission Ratios

EKMA uses what are called emission factor ratios to project future inventories. These ratios are derived by dividing the emission factors projected for future calendar years by those for the base year, in this case 1979. The calculation is carried out for each vehicle category in each projection year. In general, the smaller the numbers, the greater will be the expected improvement in air quality.

2.H. Summary of Results

Tables 24 and 25 describe the average percent change, from 1979 levels, of the expected average ambient ozone concentration for both the low and high altitude regions. As the tables indicate, the total hydrocarbon, 30% methane strategy combined with an inspection and maintenance (I/M) program produces the greatest ozone air quality improvement in both the low and high altitude regions. If I/M programs are in place by January 1, 1982, this strategy will produce 1990 ozone concentration levels that will be 24 percent lower than they were in 1979 in low altitude areas and 26 percent lower in the high altitude areas. Under the non-methane hydrocarbon strategies, however, these reductions are one percentage point less. Without I/M, air quality improvement values for all strategies decline to between 20 and 21 percent for the low altitude areas and to between 21 and 23 percent for the high altitude areas. (The total hydrocarbon, 30% methane strategy also results in the greatest air quality improvement from among the non-I/M strategies in both low and high altitude regions.)

Tables 26 and 27 show the number of regions expected to exceed the NAAQS ozone standard in each projection year. Generally, the total hydrocarbon 30% methane strategy results in the greatest compliance record of all four low altitude strategies. However, in high altitude areas, the number of regions expected to exceed the standard depends upon whether or not I/M is implemented. The I/M scenarios result in more attainment areas than do the non-I/M scenarios.

Finally, Tables 28 and 29 describe the total number of NAAQS exceedences in each projection year. In both the low and high altitude areas, the total hydrocarbon, 30% methane strategy results in the fewest NAAQS exceedences.

These tables should be used cautiously. When comparing emission control strategies, it is generally better to focus on the relative differences in air quality levels rather than on the absolute numbers of predicted violations for each urban area. A comparison of differences among scenarios is least apt to be affected by changes in the underlying analytical assumptions. Statements about the number of violations or number of urban areas in non-attainment status as of any particular year are more sensitive to changes in the basic assumptions.

Table 1
Low Altitude Emission Rates and Regulations
For The Non-Methane HC LDGV and LDGT Analysis

Vehicle Type	Model Year	Total HC Emission Rate ZM	DR	Std	Description SEA	Life	Technology Mix	Strategy
LDGV	1981-82	0.36	0.20	.41	40%	Half	73.2% CLC & 26.8 OLC	1-4
LDGV	1983+	0.35	0.20	.41	40%	Half	5.3% CTB, 57.9% CLC, & 36.8% OLC	1 & 2
LDGV	1983+	0.39	0.24	.39*	40%	Half	5.3% CTB, 57.9.% CLC, & 36.8% OLC	3
LDGV	1983+	0.48	0.29	.39*	40%	Half	5.3% CTB, 57.9.% CLC, & 36.8% OLC	4
LDGTs	1983	0.88	0.26	1.7	40%	Half	100% Ox. Cat (no 3ws)	1 & 2
LDGTs	1984+	0.58	0.14	0.8	40%	Full	100% Ox. Cat (no 3ws)	1 & 2
LDGTs	1983	0.98	0.31	1.6*	40%	Half	100% Ox. Cat (no 3ws)	3
LDGTs	1984+	0.65	0.16	.76*	40%	Full	100% Ox. Cat (no 3ws)	3
LDGTs	1983	1.19	0.37	1.6*	40%	Half	100% Ox. Cat (no 3ws)	4
LDGTs	1984+	0.79	0.20	.76*	40%	Full	100% Ox. Cat (no 3ws)	4
HDGV	1979-83	5.06	0.32		-	Half	No Catalyst Tech.	1-4
HDGV	1984-85	1.96	0.22	1.3	-	Full	No Catalyst Tech.	1-4
HDGV	1986+	1.72	0.22	1.3	40%	Full	No Catalyst Tech.	1-4
HDDV	1984-85	3.49	0.04	1.3	-	Full	--	1-4
HDDV	1986+	2.97	0.04	1.3	40%	Full	--	1-4

*The estimated non-methane HC emission standard.
CTB is short for the closed-loop throttle body injected technology.
CLC is short for the closed-loop carbureted technology.
OLC is short for the open-loop carbureted technology.

Table 2
High Altitude Emission Rates and Regulations
For The Non-Methane HC LDGV and LDGT Analysis

Vehicle Type	Model Year	Total HC Emission Rate ZM	DR	Description Std	SEA	Life	Technology Mix	Strategy
LDGV	1981	0.59	0.21	-	-	-	73.2% CLC & 26.8 OLC (low @ hi)	1-4
LDGV	1982	0.48	0.21	.57	-	Half	73.2% CLC & 26.8 OLC	1-4
LDGV	1983+	0.46	0.21	.57	-	Half	5.3% CTB, 57.9% CLC, & 36.8% OLC	1 & 2
LDGV	1983+	0.52	0.25	.54*	-	Half	5.3% CTB, 57.9% CLC, & 36.8% OLC	3
LDGV	1983+	0.64	0.30	.54*	-	Half	5.3% CTB, 57.9% CLC, & 36.8% OLC	4
LDGTs	1983	1.04	0.26	2.0	-	Half	100% Ox. Cat (no 3ws)	1 & 2
LDGTs	1984+	0.78	0.14	1.0	-	Full	100% Ox. Cat (no 3ws)	1 & 2
LDGTs	1983	1.14	0.31	1.9*	-	Half	100% Ox. Cat (no 3ws)	3
LDGTs	1984+	0.86	0.16	.95*	-	Full	100% Ox. Cat (no 3ws)	3
LDGTs	1983	1.40	0.37	1.9*	-	Half	100% Ox. Cat (no 3ws)	4
LDGTs	1984+	1.09	0.20	.95*	-	Full	100% Ox. Cat (no 3ws)	4
HDGV	1979-83	6.90	0.32	-	-	-	No Catalyst Tech.	1-4
HDGV	1984-85	2.67	0.22	-	-	-	No Catalyst Tech.	1-4
HDGV	1986+	2.34	0.22	-	-	-	No Catalyst Tech.	1-4
LDDV	1984+	0.54	0.03	.57	-	Half	-	1-4
LDDT	1984+	0.76	0.06	1.0	-	Full	-	1-4
HDDV	1984-85	8.03	0.04	-	-	-	-	1-4
HDDV	1986+	6.83	0.04	-	-	-	-	1-4

*The estimated non-methane HC emission standard.
CTB is short for the closed-loop throttle body injected technology.
CLC is short for the closed-loop carbureted technology.
OLC is short for the open-loop carbureted technology.

TABLE 3

STRATEGY 1 15% TOTAL HC STANDARD ANALYSIS WITH IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.18	5.35	7.76	6.22	17.11	0.72	0.91	4.21	8.97	5.80
1	82	3.73	3.99	3.46	3.79	13.67	0.54	0.98	4.21	6.50	4.15
1	83	2.72	3.00	2.51	2.82	12.86	0.52	0.97	4.21	6.09	3.19
1	85	1.88	2.10	1.59	1.91	10.38	0.51	0.91	4.21	5.81	2.30
1	87	1.48	1.65	1.18	1.48	8.03	0.50	0.88	4.09	5.76	1.82
1	88	1.36	1.50	1.07	1.34	7.03	0.50	0.86	4.02	5.72	1.66
1	90	1.20	1.26	0.92	1.12	5.43	0.51	0.86	3.92	5.71	1.43
1	95	1.05	0.94	0.76	0.87	3.79	0.54	0.91	3.77	5.71	1.20
1	0	1.02	0.83	0.72	0.79	3.27	0.55	0.94	3.72	5.71	1.15

TABLE 4

STRATEGY 2 30% TOTAL HC STANDARD ANALYSIS WITH IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.03	5.15	7.74	6.08	17.11	0.72	0.91	4.21	8.97	5.67
1	82	3.48	3.70	3.29	3.55	13.67	0.54	0.98	4.21	6.50	3.93
1	83	2.51	2.77	2.36	2.62	12.86	0.52	0.97	4.21	6.09	3.01
1	85	1.69	1.90	1.45	1.74	10.38	0.51	0.91	4.21	5.81	2.14
1	87	1.29	1.47	1.06	1.32	8.03	0.50	0.88	4.09	5.76	1.67
1	88	1.18	1.32	0.95	1.18	7.03	0.50	0.86	4.02	5.72	1.51
1	90	1.03	1.09	0.80	0.98	5.43	0.51	0.86	3.92	5.71	1.30
1	95	0.88	0.80	0.65	0.74	3.79	0.54	0.91	3.77	5.71	1.08
1	0	0.86	0.71	0.61	0.67	3.27	0.55	0.94	3.72	5.71	1.03

TABLE 5

STRATEGY 3 15% NON-METHANE HC STANDARD ANALYSIS WITH IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.18	5.35	7.76	6.22	17.11	0.72	0.91	4.21	8.97	5.80
1	82	3.73	3.99	3.46	3.79	13.67	0.54	0.98	4.21	6.50	4.15
1	83	2.72	3.00	2.52	2.83	12.86	0.52	0.97	4.21	6.09	3.19
1	85	1.90	2.13	1.64	1.95	10.38	0.51	0.91	4.21	5.81	2.32
1	87	1.52	1.70	1.25	1.53	8.03	0.50	0.88	4.09	5.76	1.86
1	88	1.43	1.56	1.14	1.40	7.03	0.50	0.86	4.02	5.72	1.72
1	90	1.30	1.33	0.99	1.20	5.43	0.51	0.86	3.92	5.71	1.51
1	95	1.21	1.03	0.84	0.95	3.79	0.54	0.91	3.77	5.71	1.32
1	0	1.19	0.93	0.80	0.87	3.27	0.55	0.94	3.72	5.71	1.27

TABLE 6

STRATEGY 4 30% NON-METHANE HC STANDARD ANALYSIS WITH IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.03	5.15	7.74	6.08	17.11	0.72	0.91	4.21	8.97	5.67
1	82	3.48	3.70	3.29	3.55	13.67	0.54	0.98	4.21	6.50	3.93
1	83	2.52	2.78	2.39	2.64	12.86	0.52	0.97	4.21	6.09	3.01
1	85	1.74	1.98	1.59	1.83	10.38	0.51	0.91	4.21	5.81	2.18
1	87	1.39	1.58	1.21	1.44	8.03	0.50	0.88	4.09	5.76	1.75
1	88	1.31	1.46	1.12	1.33	7.03	0.50	0.86	4.02	5.72	1.63
1	90	1.22	1.26	0.98	1.15	5.43	0.51	0.86	3.92	5.71	1.45
1	95	1.19	1.01	0.84	0.94	3.79	0.54	0.91	3.77	5.71	1.30
1	0	1.19	0.93	0.81	0.88	3.27	0.55	0.94	3.72	5.71	1.26

TABLE 7

STRATEGY 1 15% TOTAL HC STANDARD ANALYSIS W/O IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.18	5.35	7.76	6.22	17.11	0.72	0.91	4.21	8.97	5.80
1	82	3.73	3.99	3.46	3.79	13.67	0.54	0.98	4.21	6.50	4.15
1	83	3.38	3.64	2.99	3.40	12.86	0.52	0.97	4.21	6.09	3.77
1	85	2.75	3.02	2.18	2.71	10.38	0.51	0.91	4.21	5.81	3.06
1	87	2.28	2.56	1.68	2.23	8.03	0.50	0.88	4.09	5.76	2.50
1	88	2.12	2.35	1.53	2.04	7.03	0.50	0.86	4.02	5.72	2.29
1	90	1.86	2.01	1.30	1.74	5.43	0.51	0.86	3.92	5.71	1.97
1	95	1.56	1.52	1.05	1.33	3.79	0.54	0.91	3.77	5.71	1.59
1	0	1.49	1.31	0.98	1.17	3.27	0.55	0.94	3.72	5.71	1.49

TABLE 8

STRATEGY 2 30% TOTAL HC STANDARD ANALYSIS W/O IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.03	5.15	7.74	6.08	17.11	0.72	0.91	4.21	8.97	5.67
1	82	3.48	3.70	3.29	3.55	13.67	0.54	0.98	4.21	6.50	3.93
1	83	3.10	3.34	2.81	3.15	12.86	0.52	0.97	4.21	6.09	3.52
1	85	2.45	2.72	2.00	2.45	10.38	0.51	0.91	4.21	5.81	2.80
1	87	1.98	2.25	1.51	1.97	8.03	0.50	0.88	4.09	5.76	2.25
1	88	1.82	2.06	1.36	1.79	7.03	0.50	0.86	4.02	5.72	2.04
1	90	1.58	1.72	1.14	1.50	5.43	0.51	0.86	3.92	5.71	1.74
1	95	1.30	1.27	0.89	1.12	3.79	0.54	0.91	3.77	5.71	1.40
1	0	1.24	1.10	0.82	0.99	3.27	0.55	0.94	3.72	5.71	1.31

TABLE 9

STRATEGY 3 15% NON-METHANE HC STANDARD ANALYSIS W/O IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.18	5.35	7.76	6.22	17.11	0.72	0.91	4.21	8.97	5.80
1	82	3.73	3.99	3.46	3.79	13.67	0.54	0.98	4.21	6.50	4.15
1	83	3.38	3.64	3.00	3.41	12.86	0.52	0.97	4.21	6.09	3.77
1	85	2.77	3.06	2.25	2.76	10.38	0.51	0.91	4.21	5.81	3.08
1	87	2.34	2.63	1.77	2.30	8.03	0.50	0.88	4.09	5.76	2.55
1	88	2.20	2.44	1.63	2.14	7.03	0.50	0.86	4.02	5.72	2.36
1	90	2.00	2.11	1.41	1.84	5.43	0.51	0.86	3.92	5.71	2.07
1	95	1.79	1.66	1.16	1.46	3.79	0.54	0.91	3.77	5.71	1.75
1	0	1.74	1.46	1.09	1.31	3.27	0.55	0.94	3.72	5.71	1.66

TABLE 10

STRATEGY 4 30% NON-METHANE HC STANDARD ANALYSIS W/O IM LOW ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=1800 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
1	79	5.03	5.15	7.74	6.08	17.11	0.72	0.91	4.21	8.97	5.67
1	82	3.48	3.70	3.29	3.55	13.67	0.54	0.98	4.21	6.50	3.93
1	83	3.11	3.36	2.84	3.17	12.86	0.52	0.97	4.21	6.09	3.53
1	85	2.50	2.81	2.16	2.57	10.38	0.51	0.91	4.21	5.81	2.85
1	87	2.10	2.41	1.71	2.15	8.03	0.50	0.88	4.09	5.76	2.36
1	88	1.99	2.26	1.59	2.01	7.03	0.50	0.86	4.02	5.72	2.20
1	90	1.86	1.98	1.39	1.75	5.43	0.51	0.86	3.92	5.71	1.96
1	95	1.75	1.62	1.17	1.43	3.79	0.54	0.91	3.77	5.71	1.72
1	0	1.73	1.48	1.11	1.32	3.27	0.55	0.94	3.72	5.71	1.66

TABLE 11

STRATEGY 1 15% TOTAL HC STANDARD ANALYSIS WITH IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.50	6.80	10.24	8.04	22.09	1.55	2.03	8.57	11.41	7.45
3	82	4.57	4.98	4.53	4.82	17.55	1.07	2.05	8.57	8.49	5.27
3	83	3.31	3.71	3.20	3.52	16.48	0.91	2.08	8.57	8.04	4.06
3	85	2.26	2.57	1.97	2.35	13.19	0.78	1.68	8.57	7.78	2.93
3	87	1.73	1.98	1.46	1.78	10.11	0.70	1.40	8.29	7.75	2.30
3	88	1.58	1.79	1.32	1.61	8.80	0.68	1.28	8.13	7.70	2.10
3	90	1.38	1.48	1.12	1.34	6.72	0.67	1.12	7.89	7.70	1.80
3	95	1.19	1.10	0.92	1.03	4.60	0.68	1.08	7.54	7.70	1.51
3	0	1.15	0.98	0.88	0.94	3.93	0.70	1.08	7.44	7.70	1.44

TABLE 12

STRATEGY 2 30% TOTAL HC STANDARD ANALYSIS WITH IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.30	6.53	10.21	7.85	22.09	1.55	2.03	8.57	11.41	7.27
3	82	4.27	4.62	4.31	4.51	17.55	1.07	2.05	8.57	8.49	4.99
3	83	3.06	3.43	3.01	3.27	16.48	0.91	2.08	8.57	8.04	3.84
3	85	2.03	2.34	1.80	2.14	13.19	0.78	1.68	8.57	7.78	2.74
3	87	1.52	1.76	1.51	1.59	10.11	0.70	1.40	8.29	7.75	2.12
3	88	1.38	1.58	1.17	1.43	8.80	0.68	1.28	8.13	7.70	1.93
3	90	1.18	1.29	0.98	1.17	6.72	0.67	1.12	7.89	7.70	1.65
3	95	1.00	0.94	0.79	0.88	4.60	0.68	1.08	7.54	7.70	1.37
3	0	0.97	0.83	0.74	0.80	3.93	0.70	1.08	7.44	7.70	1.31

TABLE 13

STRATEGY 3 15% NON-METHANE HC STANDARD ANALYSIS WITH IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.50	6.80	10.24	8.04	22.09	1.55	2.03	8.57	11.41	7.45
3	82	4.57	4.98	4.53	4.82	17.55	1.07	2.05	8.57	8.49	5.27
3	83	3.31	3.71	3.21	3.53	16.48	0.91	2.08	8.57	8.04	4.06
3	85	2.28	2.61	2.03	2.39	13.19	0.78	1.68	8.57	7.78	2.95
3	87	1.79	2.03	1.53	1.84	10.11	0.70	1.40	8.29	7.75	2.35
3	88	1.66	1.86	1.39	1.68	8.80	0.68	1.28	8.13	7.70	2.16
3	90	1.49	1.56	1.20	1.42	6.72	0.67	1.12	7.89	7.70	1.89
3	95	1.37	1.20	1.01	1.12	4.60	0.68	1.08	7.54	7.70	1.64
3	0	1.34	1.08	0.97	1.03	3.93	0.70	1.08	7.44	7.70	1.57

TABLE 14

STRATEGY 4 30% NON-METHANE HC STANDARD ANALYSIS WITH IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

REG	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.30	6.53	10.21	7.85	22.09	1.55	2.03	8.57	11.41	7.27
3	82	4.27	4.62	4.31	4.51	17.55	1.07	2.05	8.57	8.49	4.99
3	83	3.07	3.44	3.04	3.29	16.48	0.91	2.08	8.57	8.04	3.84
3	85	2.09	2.42	1.97	2.26	13.19	0.78	1.68	8.57	7.78	2.79
3	87	1.64	1.90	1.51	1.75	10.11	0.70	1.40	8.29	7.75	2.23
3	88	1.54	1.75	1.39	1.61	8.80	0.68	1.28	8.13	7.70	2.07
3	90	1.41	1.49	1.21	1.39	6.72	0.67	1.12	7.89	7.70	1.83
3	95	1.36	1.19	1.04	1.13	4.60	0.68	1.08	7.54	7.70	1.63
3	0	1.36	1.11	1.00	1.06	3.93	0.70	1.08	7.44	7.70	1.58

TABLE 15

STRATEGY 1 15% TOTAL HC STANDARD ANALYSIS W/O IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

R E G	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.50	6.80	10.24	8.04	22.09	1.55	2.03	8.57	11.41	7.45
3	82	4.57	4.98	4.53	4.82	17.55	1.07	2.05	8.57	8.49	5.27
3	83	4.10	4.50	3.81	4.25	16.48	0.91	2.08	8.57	8.04	4.75
3	85	3.27	3.69	2.70	3.32	13.19	0.78	1.68	8.57	7.78	3.81
3	87	2.64	3.04	2.06	2.67	10.11	0.70	1.40	8.29	7.75	3.07
3	88	2.43	2.79	1.86	2.44	8.80	0.68	1.28	8.13	7.70	2.81
3	90	2.11	2.35	1.58	2.05	6.72	0.67	1.12	7.89	7.70	2.39
3	91	1.98	2.17	1.48	1.90	6.09	0.67	1.09	7.77	7.70	2.24
3	92	1.90	2.05	1.41	1.80	5.62	0.67	1.08	7.68	7.70	2.13
3	93	1.83	1.93	1.35	1.70	5.19	0.67	1.08	7.62	7.70	2.05
3	94	1.78	1.83	1.30	1.62	4.85	0.68	1.07	7.58	7.70	1.98
3	95	1.75	1.75	1.26	1.56	4.60	0.68	1.08	7.54	7.70	1.93
3	0	1.67	1.52	1.18	1.38	3.93	0.70	1.08	7.44	7.70	1.82

TABLE 16

STRATEGY 2 30% TOTAL HC STANDARD ANALYSIS W/O IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

R E G	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.30	6.53	10.21	7.85	22.09	1.55	2.03	8.57	11.41	7.27
3	82	4.27	4.62	4.31	4.51	17.55	1.07	2.05	8.57	8.49	4.99
3	83	3.77	4.13	3.59	3.94	16.48	0.91	2.08	8.57	8.04	4.46
3	85	2.92	3.32	2.47	3.01	13.19	0.78	1.68	8.57	7.78	3.51
3	87	2.30	2.68	1.85	2.37	10.11	0.70	1.40	8.29	7.75	2.79
3	88	2.09	2.44	1.66	2.14	8.80	0.68	1.28	8.13	7.70	2.53
3	90	1.79	2.02	1.38	1.77	6.72	0.67	1.12	7.89	7.70	2.14
3	95	1.47	1.47	1.07	1.31	4.60	0.68	1.08	7.54	7.70	1.72
3	0	1.40	1.27	0.99	1.16	3.93	0.70	1.08	7.44	7.70	1.62

TABLE 17

STRATEGY 3 15% NON-METHANE HC STANDARD ANALYSIS W/O IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

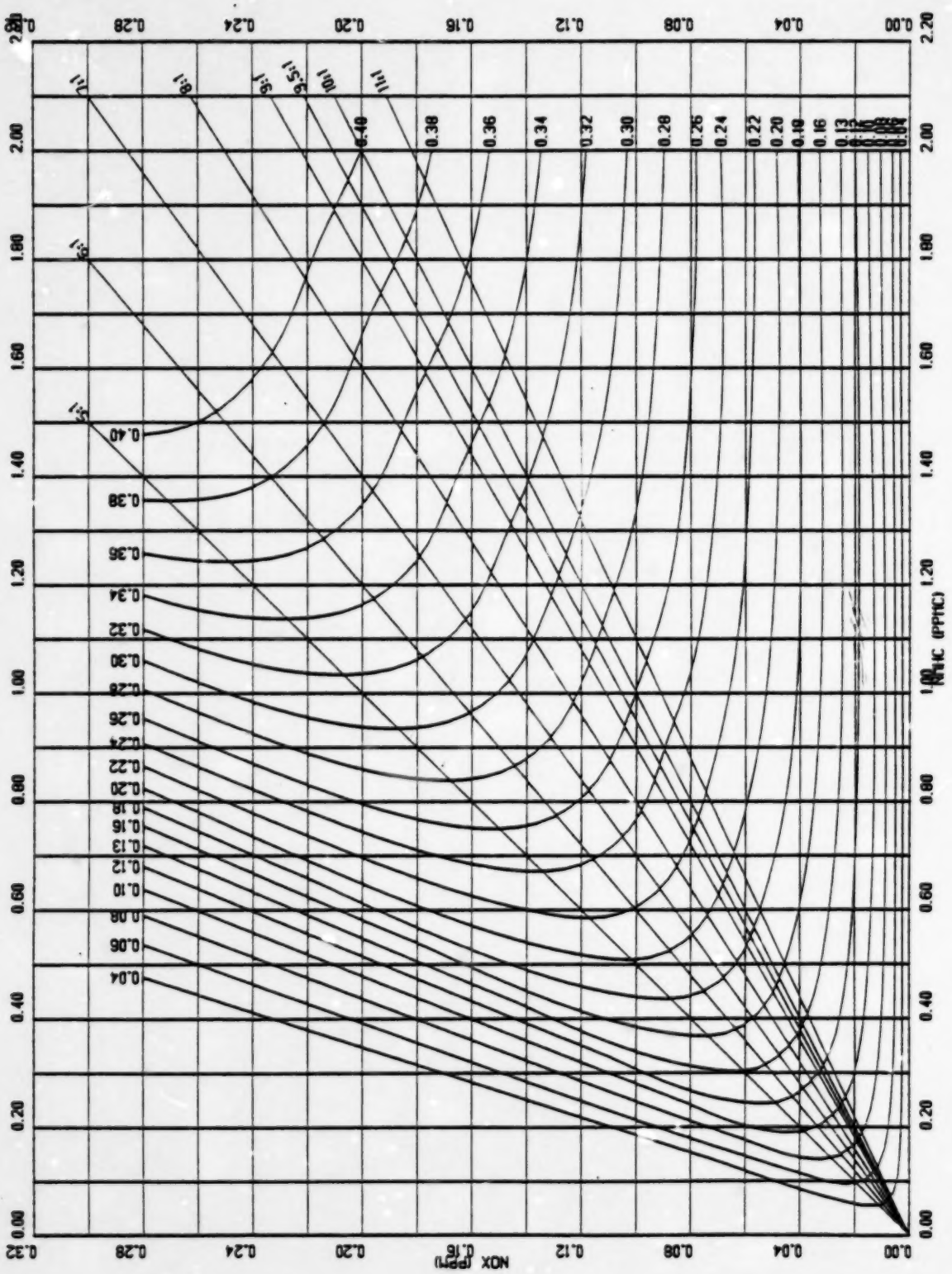
R E G	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.50	6.80	10.24	8.04	22.09	1.55	2.03	8.57	11.41	7.45
3	82	4.57	4.98	4.53	4.82	17.55	1.07	2.05	8.57	8.49	5.27
3	83	4.10	4.51	3.82	4.26	16.48	0.91	2.08	8.57	8.04	4.76
3	85	3.29	3.73	2.77	3.38	13.19	0.78	1.68	8.57	7.78	3.84
3	87	2.71	3.11	2.15	2.75	10.11	0.70	1.40	8.29	7.75	3.13
3	88	2.53	2.88	1.97	2.54	8.80	0.68	1.28	8.13	7.70	2.89
3	90	2.26	2.46	1.69	2.16	6.72	0.67	1.12	7.89	7.70	2.51
3	95	1.99	1.90	1.38	1.69	4.60	0.68	1.08	7.54	7.70	2.11
3	0	1.93	1.68	1.30	1.52	3.93	0.70	1.08	7.44	7.70	2.00

TABLE 18

STRATEGY 4 30% NON-METHANE HC STANDARD ANALYSIS W/O IM HIGH ALTITUDE

AMBIENT TEMP. = 75 F; ALTITUDE=5300 FT.; COLD/HOT START = 20.6/27.3/20.6;
VEHICLE SPEEDS = 19.6 MPH FOR LD & MC, 20.0 MPH FOR HD; MOBILE2 CALCULATED VMT MIX.

R E G	CY	COMPOSITE EMISSION FACTORS LDGV	LDGT1	LDGT2	LDGT	HDGV	LDDV	LDDT	HDDV	MC	C.E.F. ALL VEH
3	79	6.30	6.53	10.21	7.85	22.09	1.55	2.03	8.57	11.41	7.27
3	82	4.27	4.62	4.31	4.51	17.55	1.07	2.05	8.57	8.49	4.99
3	83	3.77	4.15	3.62	3.96	16.48	0.91	2.08	8.57	8.04	4.47
3	85	2.98	3.43	2.67	3.15	13.19	0.78	1.68	8.57	7.78	3.57
3	87	2.43	2.87	2.11	2.59	10.11	0.70	1.40	8.29	7.75	2.91
3	88	2.29	2.68	1.95	2.40	8.80	0.68	1.28	8.13	7.70	2.70
3	90	2.10	2.33	1.69	2.08	6.72	0.67	1.12	7.89	7.70	2.39
3	95	1.95	1.88	1.42	1.69	4.60	0.68	1.08	7.54	7.70	2.08
3	0	1.92	1.72	1.34	1.57	3.93	0.70	1.08	7.44	7.70	1.99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NMHC (PPMC)
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0.08
0.12
0.16
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0.24
0.28
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0.00
0.20
0.40
0.60
0.80
1.00
1.20
1.40
1.60
1.80
2.00
2.20
0.40
0.38
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.22
0.20
0.18
0.16
0.13
0.12
0.10
0.08
0.06
0.04

FIGURE 1

Table 19

Urban Areas for Low Altitude 03

New York,NY-NJ	Providence	St.Louis
Philadelphia	Allentown,PA	Detroit
Washington,DC	Cleveland	Portland,OR
Louisville,KY	Pittsburgh	Richmond,VA
Cincinnati	Nashville	Seattle
Baltimore	Houston	Milwaukee
Worcester,MA	Hartford	
Boston	Chicago	

Table 20

Urban Areas for High Altitude 03

Denver	Salt Lake City

Table 21

EKMA Assumptions

O3 Air Quality Analysis

>>>> Background Level:

0 PPM

>>>> Design Values (PPM):

Urban Area	Value	Urban Area	Value	Urban Area	Value
New York,NY-NJ	.26	Providence	.19	St.Louis	.18
Philadelphia	.20	Allentown,PA	.23	Detroit	.13
Washington,DC	.16	Cleveland	.13	Portland,OR	.12
Louisville,KY	.19	Pittsburgh	.17	Richmond,VA	.13
Cincinnati	.16	Nashville	.13	Seattle	.16
Baltimore	.15	Houston	.23	Milwaukee	.19
Worcester,MA	.19	Hartford	.24		
Boston	.18	Chicago	.19		

>>>> NMHC/NOX Ratios:

Urban Area	Ratio	Urban Area	Ratio	Urban Area	Ratio
New York,NY-NJ	9.5	Providence	9.5	St.Louis	8.5
Philadelphia	9.5	Allentown,PA	9.5	Detroit	9.5
Washington,DC	9.2	Cleveland	9.5	Portland,OR	9.5
Louisville,KY	9.5	Pittsburgh	9.5	Richmond,VA	9.4
Cincinnati	9.5	Nashville	9.5	Seattle	9.5
Baltimore	9.5	Houston	7.5	Milwaukee	9.5
Worcester,MA	9.5	Hartford	9.5		
Boston	9.5	Chicago	7.2		

Table 22

EKMA Assumptions

O3 Air Quality Analysis

>>>> Background Level:

0 PPM

>>>> Design Values (PPM):

Urban Area	Value	Urban Area	Value
Denver	.16	Salt Lake City	.19

>>>> NMHC/NOX Ratios:

Urban Area	Ratio	Urban Area	Ratio
Denver	9.5	Salt Lake City	9.5

Table 23

O3 Air Quality Analysis

Annual Growth and Replacement Rates, Discount Factors, and Control Efficiencies

Designation	Growth Rate 1977-1995 Medium	Replacement Rates	Discount Factor	NSPS and RACT Control Efficiencies
LDGV	+1.4 *	As in MOBILE II	1.0	
LDGT	+1.4	As in MOBILE II	1.0	
HDG	-2.0	As in MOBILE II	1.0	
LDDV	+1.4	As in MOBILE II	1.0	
HDD	+5.0	As in MOBILE II	1.0	
Off-Highway	+2.5	0.0	1.0	No Control
Other Stationary	0.0	0.0	1.0	No Control
Petrol	+1.9	+4.5	1.0	90
Storage	+1.9	+4.5	1.0	80
Ind Proc	+3.1	+5.1	1.0	65
Other Solvent	+0.8	0.0	1.0	30
Ind Surface	+3.3	+4.4	1.0	60

* Compound annual rate.

Table 24

Low Altitude O3 (EKMA) — Average Percent Change from Base Year — Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	-16	-19	-22	-23	-23	-23	-21	-18
Strategy 1 without I/M	Total HC Standard (15% CH4)	-16	-16	-18	-19	-20	-20	-19	-16
Strategy 2 with I/M	Total HC Standard (30% CH4)	-16	-19	-22	-24	-24	-24	-22	-18
Strategy 2 without I/M	Total HC Standard (30% CH4)	-16	-17	-19	-21	-21	-21	-20	-17
Strategy 3 with I/M	NMHC Standard (15% CH4)	-16	-19	-21	-23	-23	-23	-20	-17
Strategy 3 without I/M	NMHC Standard (15% CH4)	-16	-16	-18	-19	-19	-20	-18	-15
Strategy 4 with I/M	NMHC Standard (30% CH4)	-16	-19	-22	-23	-23	-23	-20	-17
Strategy 4 without I/M	NMHC Standard (30% CH4)	-16	-17	-19	-20	-20	-20	-18	-15

Table 25

High Altitude O3 (EKMA) — Average Percent Change from Base Year — Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	-12	-16	-21	-24	-25	-26	-24	-21
Strategy 1 without I/M	Total HC Standard (15% CH4)	-12	-13	-17	-20	-21	-22	-22	-19
Strategy 2 with I/M	Total HC Standard (30% CH4)	-13	-17	-22	-25	-25	-26	-25	-22
Strategy 2 without I/M	Total HC Standard (30% CH4)	-13	-14	-18	-21	-22	-23	-23	-20
Strategy 3 with I/M	NMHC Standard (15% CH4)	-12	-16	-21	-24	-24	-25	-23	-20
Strategy 3 without I/M	NMHC Standard (15% CH4)	-12	-13	-17	-19	-20	-21	-21	-18
Strategy 4 with I/M	NMHC Standard (30% CH4)	-13	-17	-21	-24	-25	-25	-23	-20
Strategy 4 without I/M	NMHC Standard (30% CH4)	-13	-14	-17	-20	-21	-22	-21	-17

Table 26

Low Altitude O3 (EKMA) Estimated Number of Regions Above Standard Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	17	16	15	13	13	13	14	15
Strategy 1 without I/M	Total HC Standard (15% CH4)	17	17	16	16	16	15	15	16
Strategy 2 with I/M	Total HC Standard (30% CH4)	17	16	14	13	13	13	14	15
Strategy 2 without I/M	Total HC Standard (30% CH4)	17	17	16	16	15	15	15	16
Strategy 3 with I/M	NMHC Standard (15% CH4)	17	16	15	14	13	14	14	16
Strategy 3 without I/M	NMHC Standard (15% CH4)	17	17	16	16	16	16	16	16
Strategy 4 with I/M	NMHC Standard (30% CH4)	17	16	15	13	13	14	14	16
Strategy 4 without I/M	NMHC Standard (30% CH4)	17	17	16	16	16	16	16	16

Table 27

High Altitude O3 (EKMA) Estimated Number of Regions Above Standard Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	2	2	2	1	1	1	1	1
Strategy 1 without I/M	Total HC Standard (15% CH4)	2	2	2	2	2	1	1	2
Strategy 2 with I/M	Total HC Standard (30% CH4)	2	2	2	1	1	1	1	1
Strategy 2 without I/M	Total HC Standard (30% CH4)	2	2	2	2	1	1	1	1
Strategy 3 with I/M	NMHC Standard (15% CH4)	2	2	2	1	1	1	1	1
Strategy 3 without I/M	NMHC Standard (15% CH4)	2	2	2	2	2	1	1	2
Strategy 4 with I/M	NMHC Standard (30% CH4)	2	2	2	1	1	1	1	1
Strategy 4 without I/M	NMHC Standard (30% CH4)	2	2	2	2	2	1	1	2

Table 28

Low Altitude O3 (EKMA) — Total Number of Exceedances — Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	98	80	71	62	62	61	72	85
Strategy 1 without I/M	Total HC Standard (15% CH4)	98	96	85	78	76	76	82	96
Strategy 2 with I/M	Total HC Standard (30% CH4)	95	77	69	59	59	61	71	85
Strategy 2 without I/M	Total HC Standard (30% CH4)	95	91	80	74	72	72	80	93
Strategy 3 with I/M	NMHC Standard (15% CH4)	98	80	71	65	64	64	75	90
Strategy 3 without I/M	NMHC Standard (15% CH4)	98	96	86	80	78	77	86	102
Strategy 4 with I/M	NMHC Standard (30% CH4)	95	77	71	61	62	63	75	90
Strategy 4 without I/M	NMHC Standard (30% CH4)	95	92	82	76	76	77	87	102

Table 29

High Altitude O3 (EKMA) — Total Number of Exceedances — Medium Growth

Scenario	Description	1982	1983	1985	1987	1988	1990	1995	2000
Strategy 1 with I/M	Total HC Standard (15% CH4)	8	6	4	3	3	2	3	4
Strategy 1 without I/M	Total HC Standard (15% CH4)	8	8	6	5	5	3	4	6
Strategy 2 with I/M	Total HC Standard (30% CH4)	8	5	4	3	2	2	3	4
Strategy 2 without I/M	Total HC Standard (30% CH4)	8	7	5	5	3	3	3	4
Strategy 3 with I/M	NMHC Standard (15% CH4)	8	6	4	3	3	3	3	4
Strategy 3 without I/M	NMHC Standard (15% CH4)	8	8	6	5	5	4	4	6
Strategy 4 with I/M	NMHC Standard (30% CH4)	8	5	4	3	3	3	3	4
Strategy 4 without I/M	NMHC Standard (30% CH4)	8	7	5	5	5	4	4	6

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Appendix A

Alternate I/M Credits For The Non-Methane HC Standards On The 1983 And Later Light Duty Gasoline Powered Vehicles and Trucks

Twelve alternate sets of I/M credits were generated for the non-methane HC standards analysis. The twelve sets were generated for th 1981 and later model year light duty gasoline powered vehicles. Six for the low altitude and six for the high altitude passenger cars. Table A-1 presents a summary of the twelve alternate sets. This table gives the table number for each model year, strategy, and region for which the I/M credits are valid.

Table A-1

Summary Table for Alternate I/M Credits Used For
The Non-Methane HC LDGV and LDGT Analysis

Region	Model Year	Strategy[1]	Table Number
Low	1981	1-4	A-2
Low	1982	1-4	A-3
Low	1983+	1	A-4
Low	1983+	2	A-5
Low	1983+	3	A-6
Low	1983+	4	A-7
High	1981	1-4	A-8
High	1982	1-4	A-9
High	1983+	1	A-10
High	1983+	2	A-11
High	1983+	3	A-12
High	1983+	4	A-13

1 Strategy 1: Total HC standards with 15% methane.
Strategy 2: Total HC Standards with 30% methane.
Strategy 3: Non-Methane HC Standards with 15% methane.
Strategy 4: Non-Methane HC Standards with 30% methane.

TABLE A-2

TECH 4 I/M CREDITS ARE FOR THE 81 LDGVS 73.2% CLC;26.8% OLC;31.6% WAIVER

7	23	27	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	36
23	27	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	36	36
27	30	31	32	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36
30	31	32	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36
31	33	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36	36
33	33	34	34	35	35	35	36	36	36	36	36	36	36	35	35	35	35	35
34	34	35	35	35	35	36	36	36	36	36	36	36	35	35	35	35	35	35
34	35	35	35	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35
35	35	35	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	34
35	36	36	36	36	36	36	36	36	36	35	35	34	34	34	34	34	34	34
36	36	36	36	36	36	36	36	37	34	34	34	34	34	34	34	34	34	34
36	36	36	36	36	37	37	37	34	34	34	34	34	34	34	34	34	33	33
36	36	37	37	37	37	37	34	34	34	34	34	34	34	33	33	33	33	33
37	37	37	37	37	37	34	34	34	34	34	33	33	33	33	33	33	32	32
37	37	37	37	37	34	34	34	33	33	33	33	33	33	33	33	32	32	31
37	37	37	37	34	34	33	33	33	33	33	33	33	32	32	32	31	31	30
37	37	37	33	33	33	33	33	33	33	33	32	32	32	32	31	31	30	29
37	37	33	33	33	33	33	33	33	33	32	32	32	31	31	31	30	29	27
37	33	33	33	33	33	33	33	32	32	32	32	31	31	30	30	29	27	25
33	33	33	33	33	33	33	32	32	32	32	31	31	30	30	29	27	25	8
8	25	29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38
25	29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38	41
29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38	41	41
32	34	35	36	36	37	37	37	38	38	38	38	38	38	38	38	39	41	41	41
34	35	36	36	37	37	37	38	38	38	38	38	38	38	38	39	41	41	41	41
35	36	36	37	37	38	38	38	38	38	38	38	38	39	39	41	41	41	41	41
36	36	37	37	38	38	38	38	38	38	38	39	39	39	40	40	40	40	40	40
37	37	37	38	38	38	38	38	38	38	39	39	39	40	40	40	40	40	40	40
37	38	38	38	38	38	38	39	39	39	39	40	40	40	40	40	40	40	40	40
38	38	38	38	38	39	39	39	39	39	40	40	40	40	40	40	39	39	39
38	38	38	39	39	39	39	39	39	40	40	39	39	39	39	39	39	39	39
38	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	38
39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	38	38	38
39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	38	38	38	38	37
39	39	39	39	39	39	39	39	39	39	39	38	38	38	38	38	38	37	37	36
39	39	39	40	39	39	39	39	38	38	38	38	38	38	38	37	37	37	36	35
40	40	40	39	39	39	38	38	38	38	38	38	38	37	37	37	36	36	35	34
40	40	39	39	38	38	38	38	38	38	38	38	37	37	37	36	36	35	34	32
40	39	39	38	38	38	38	38	38	38	38	37	37	37	36	36	35	34	32	29
39	38	38	38	38	38	38	38	38	38	37	37	37	36	36	35	34	32	29	9
8	27	31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41	
27	31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41	47	
31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41	46	46	
34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	46	46	46	
36	37	38	39	39	40	40	40	40	41	41	41	41	41	41	46	46	46	46	
37	38	39	39	40	40	40	40	41	41	41	41	41	41	46	46	46	46	46	
38	39	39	40	40	40	40	41	41	41	41	41	41	46	46	46	46	46	45	
39	39	40	40	40	41	41	41	41	41	41	41	45	45	45	45	45	45	45	
40	40	40	40	41	41	41	41	41	41	41	45	45	45	45	45	45	45	45	
40	40	41	41	41	41	41	41	41	41	45	45	45	45	45	45	45	45	44	

TABLE A-2 (CONT.)

TECH 4 I/M CREDITS ARE FOR THE 81 LDGVS 73.2% CLC;26.8% OLC;31.6% WAIVER

40	41	41	41	41	41	41	41	42	45	45	45	45	45	45	44	44	44	44
41	41	41	41	41	41	42	42	45	45	45	45	44	44	44	44	44	44	44
41	41	41	41	42	42	42	45	45	44	44	44	44	44	44	44	44	43	43
41	41	42	42	42	42	44	44	44	44	44	44	44	44	44	43	43	43	42
42	42	42	42	42	44	44	44	44	44	44	44	44	44	43	43	43	43	42	42
42	42	42	42	44	44	44	44	44	44	44	43	43	43	43	42	42	41	40
42	42	42	44	44	44	44	44	44	43	43	43	43	43	42	42	41	40	39
42	42	44	44	44	44	44	44	43	43	43	43	42	42	42	41	40	39	37
42	44	44	44	44	44	43	43	43	43	43	42	42	41	41	40	39	37	34
44	44	44	44	44	43	43	43	43	43	42	42	41	41	40	39	37	34	10
9	29	33	36	38	39	40	41	41	42	42	43	43	43	43	43	43	44	44
29	33	36	38	39	40	41	41	42	42	43	43	43	43	43	43	44	44	52
33	36	38	39	40	41	41	42	42	43	43	43	43	43	44	44	44	52	52
36	38	39	40	41	41	42	42	43	43	43	43	43	44	44	44	51	51	51
38	39	40	41	42	42	42	43	43	43	43	43	44	44	44	51	51	51	51
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40	41	42	42	42	43	43	43	43	44	44	44	44	51	51	51	51	51	51
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44	44	44	44	44	44	50	50	50	50	50	50	49	49	49	49	48	48	47
44	44	44	44	44	50	50	50	50	50	49	49	49	49	49	48	48	47	47
44	44	44	44	50	50	50	50	49	49	49	49	49	48	48	48	47	46	45
44	44	45	50	50	50	50	49	49	49	49	49	48	48	48	47	46	45	44
45	45	50	50	50	49	49	49	49	49	49	48	48	47	47	46	45	44	42
45	50	50	50	49	49	49	49	49	48	48	48	47	47	46	45	44	42	38
50	50	50	49	49	49	49	49	48	48	48	47	47	46	45	44	41	38	12
10	30	35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47
30	35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57
35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57	57
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42	43	43	44	44	45	45	46	46	46	46	46	46	47	57	56	56	56	56
43	43	44	45	45	45	46	46	46	46	46	47	47	56	56	56	56	56	56
44	44	45	45	45	46	46	46	46	46	47	47	56	56	56	56	56	56	56
44	45	45	45	46	46	46	46	46	47	47	56	56	56	56	56	56	55	55
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45	46	46	46	46	47	47	47	56	56	56	56	56	55	55	55	55	54	54
46	46	46	46	47	47	47	56	56	56	56	55	55	55	55	55	54	54	53
46	46	46	47	47	47	56	56	56	56	55	55	55	55	55	54	54	53	53
46	47	47	47	47	56	56	56	55	55	55	55	55	55	54	54	54	53	53	52
47	47	47	47	56	56	56	55	55	55	55	55	55	54	54	54	53	52	52	51
47	47	47	56	56	56	55	55	55	55	55	55	54	54	53	53	52	52	50	49
47	47	56	56	56	55	55	55	55	54	54	54	53	53	52	51	50	49	46
47	56	56	55	55	55	55	55	54	54	54	53	53	52	51	50	49	46	42
56	56	55	55	55	55	55	54	54	54	53	53	52	51	50	49	46	42	13

TABLE A-3

TECH 5 I/M CREDITS ARE FOR THE 82 LDGVS 73.2% CLC;26.8% OLC;21.6% WAIVER

7	23	27	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	36
23	27	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	36	37
27	30	31	32	33	34	34	35	35	35	35	36	36	36	36	36	36	37	37
30	31	32	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36
31	33	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36	36
33	33	34	34	35	35	35	36	36	36	36	36	36	36	36	36	36	36	36
34	34	35	35	35	35	36	36	36	36	36	36	36	36	36	36	36	36	36
34	35	35	35	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35
35	35	35	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35
35	36	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35
36	36	36	36	36	36	36	36	37	35	35	35	35	35	34	34	34	34	34
36	36	36	36	36	37	37	37	35	35	34	34	34	34	34	34	34	34	34
36	36	37	37	37	37	37	34	34	34	34	34	34	34	34	34	34	33	33
37	37	37	37	37	37	34	34	34	34	34	34	34	34	33	33	33	33	33
37	37	37	37	37	34	34	34	34	34	34	34	33	33	33	33	33	32	32
37	37	37	37	34	34	34	34	34	34	33	33	33	33	33	32	32	32	31
37	37	37	34	34	34	34	34	33	33	33	33	33	32	32	32	31	31	30
37	37	34	34	34	34	33	33	33	33	33	33	32	32	32	31	30	29	28
37	34	34	34	33	33	33	33	33	33	32	32	32	31	31	30	29	28	26
34	34	34	33	33	33	33	33	33	32	32	32	31	31	30	29	28	26	8
8	25	29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38
25	29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38	42
29	32	33	35	35	36	37	37	37	38	38	38	38	38	38	38	38	42	42
32	34	35	36	36	37	37	37	38	38	38	38	38	38	38	39	41	41	42
34	35	36	36	37	37	37	38	38	38	38	38	38	38	39	41	41	41	41
35	36	36	37	37	38	38	38	38	38	38	38	38	39	39	41	41	41	41
36	36	37	37	38	38	38	38	38	38	38	39	39	39	41	41	41	41	41
37	37	37	38	38	38	38	38	38	39	39	39	41	41	41	41	41	41	40
37	38	38	38	38	38	38	39	39	39	39	40	40	40	40	40	40	40	40
38	38	38	38	38	39	39	39	39	39	40	40	40	40	40	40	40	40	40
38	38	38	39	39	39	39	39	39	40	40	40	40	40	40	40	40	40	39
38	39	39	39	39	39	39	39	40	40	40	40	40	40	39	39	39	39	39
39	39	39	39	39	39	39	40	40	40	39	39	39	39	39	39	39	39	38
39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	38	38
39	39	39	39	39	39	39	39	39	39	39	39	39	39	38	38	38	37	37
39	39	39	40	39	39	39	39	39	39	39	39	38	38	38	38	37	37	36
40	40	40	39	39	39	39	39	39	39	38	38	38	38	37	37	36	36	35
40	40	39	39	39	39	39	39	38	38	38	38	38	37	37	36	36	35	33
40	39	39	39	39	39	39	38	38	38	38	37	37	37	36	35	34	33	30
39	39	39	39	39	38	38	38	38	38	37	37	37	36	35	34	33	30	9
8	27	31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41
27	31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41	47
31	34	36	37	38	38	39	39	40	40	40	40	41	41	41	41	41	47	47
34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	47	47	47
36	37	38	39	39	40	40	40	40	41	41	41	41	41	41	47	47	47	46
37	38	39	39	40	40	40	40	41	41	41	41	41	41	46	46	46	46	46
38	39	39	40	40	40	40	41	41	41	41	41	41	46	46	46	46	46	46
39	39	40	40	40	41	41	41	41	41	41	41	46	46	46	46	46	46	46
40	40	40	40	41	41	41	41	41	41	41	46	46	46	46	46	46	45	45
40	40	41	41	41	41	41	41	41	41	46	46	45	45	45	45	45	45	45

TABLE A-3 (CONT.)

TECH 5 I/M CREDITS ARE FOR THE 82 LDGVS 73.2% CLC;26.8% OLC;21.6% WAIVER

40	41	41	41	41	41	41	41	42	45	45	45	45	45	45	45	45	45	45
41	41	41	41	41	41	42	42	45	45	45	45	45	45	45	45	45	44	44
41	41	41	41	42	42	42	45	45	45	45	45	45	45	44	44	44	44	44
41	41	42	42	42	42	45	45	45	45	45	45	44	44	44	44	44	43	43
42	42	42	42	42	45	45	45	45	44	44	44	44	44	44	44	43	43	42
42	42	42	42	45	45	45	44	44	44	44	44	44	44	43	43	42	42	41
42	42	42	45	45	44	44	44	44	44	44	44	43	43	43	42	42	41	40
42	42	45	44	44	44	44	44	44	44	44	43	43	43	42	42	41	40	38
42	45	44	44	44	44	44	44	44	43	43	43	43	42	41	41	39	38	35
45	44	44	44	44	44	44	44	43	43	43	42	42	41	41	39	38	35	11
9	29	33	36	38	39	40	41	41	42	42	43	43	43	43	43	43	44	44
29	33	36	38	39	40	41	41	42	42	43	43	43	43	43	43	44	44	52
33	36	38	39	40	41	41	42	42	43	43	43	43	43	44	44	44	52	52
36	38	39	40	41	41	42	42	43	43	43	43	43	44	44	44	52	52	52
38	39	40	41	42	42	42	43	43	43	43	43	44	44	44	52	52	52	52
39	40	41	42	42	42	43	43	43	43	43	44	44	44	52	52	52	52	51
40	41	42	42	42	43	43	43	43	44	44	44	44	52	51	51	51	51	51
41	42	42	43	43	43	43	43	44	44	44	44	51	51	51	51	51	51	51
42	42	43	43	43	43	43	44	44	44	44	51	51	51	51	51	51	51	51
42	43	43	43	43	44	44	44	44	44	51	51	51	51	51	51	51	50	50
43	43	43	43	44	44	44	44	44	51	51	51	51	51	51	50	50	50	50
43	43	44	44	44	44	44	44	51	51	51	51	50	50	50	50	50	50	49
43	44	44	44	44	44	44	51	51	51	50	50	50	50	50	50	49	49	49
44	44	44	44	44	44	51	51	50	50	50	50	50	50	50	49	49	49	48
44	44	44	44	44	51	50	50	50	50	50	50	50	49	49	49	48	48	47
44	44	44	44	50	50	50	50	50	50	50	50	49	49	49	48	48	47	46
44	44	45	50	50	50	50	50	50	50	49	49	49	49	48	48	47	46	45
45	45	50	50	50	50	50	50	50	49	49	49	48	48	48	47	46	45	43
45	50	50	50	50	50	50	49	49	49	49	48	48	47	47	46	44	42	39
50	50	50	50	50	50	49	49	49	49	48	48	47	47	46	44	42	39	12
10	30	35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47
30	35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57
35	38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57	57
38	40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57	57	57
40	42	43	43	44	44	45	45	45	46	46	46	46	46	47	57	57	57	57
42	43	43	44	44	45	45	46	46	46	46	46	46	47	57	57	57	57	57
43	43	44	45	45	45	46	46	46	46	46	47	47	57	57	57	57	57	56
44	44	45	45	45	46	46	46	46	46	47	47	57	57	57	57	56	56	56
44	45	45	45	46	46	46	46	46	47	47	57	57	57	57	56	56	56	56
45	45	45	46	46	46	46	46	47	47	57	57	57	56	56	56	56	56	56
45	45	46	46	46	46	46	47	47	57	57	56	56	56	56	56	56	55	55
45	46	46	46	46	47	47	47	57	57	56	56	56	56	56	56	55	55	55
46	46	46	46	47	47	47	57	56	56	56	56	56	56	55	55	55	55	54
46	46	46	47	47	47	57	56	56	56	56	56	56	55	55	55	54	54	53
46	47	47	47	47	56	56	56	56	56	56	56	55	55	55	54	54	53	52
47	47	47	47	56	56	56	56	56	56	56	55	55	55	55	54	54	53	52	51
47	47	47	56	56	56	56	56	56	56	55	55	55	55	54	54	53	52	51	50
47	47	56	56	56	56	56	56	55	55	55	55	54	54	53	52	51	50	47
47	56	56	56	56	56	56	55	55	55	54	54	54	53	52	51	50	47	44
56	56	56	56	56	56	55	55	55	54	54	54	53	52	51	50	47	44	14

TABLE A-4

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

7	22	26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35
22	26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35
26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35	35
29	30	31	32	33	33	34	34	34	34	34	34	35	35	35	35	35	35	35
30	31	32	33	33	34	34	34	34	34	34	35	35	35	35	35	35	35	35
32	32	33	33	34	34	34	34	34	34	35	35	35	35	35	35	35	35	35
32	33	33	34	34	34	34	34	35	35	35	35	35	34	34	34	34	34	34
33	34	34	34	34	34	35	35	35	35	35	35	34	34	34	34	34	34	34
34	34	34	34	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34
34	34	34	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34	34
34	35	35	35	35	35	35	35	35	34	34	34	34	34	33	33	33	33	33
35	35	35	35	35	35	35	35	34	33	33	33	33	33	33	33	33	33	33
35	35	35	35	35	35	35	33	33	33	33	33	33	33	33	33	33	33	32
35	35	35	35	35	35	33	33	33	33	33	33	33	33	33	32	32	32	32
35	35	35	36	36	33	33	33	33	33	33	33	33	32	32	32	32	32	31
35	36	36	36	33	33	33	33	33	33	33	32	32	32	32	32	31	31	30
36	36	36	33	33	33	33	33	33	32	32	32	32	32	31	31	31	30	29
36	36	33	33	33	33	33	32	32	32	32	32	32	31	31	31	30	29	28
36	33	33	33	33	32	32	32	32	32	32	31	31	31	30	30	29	28	26
33	33	33	33	32	32	32	32	32	32	31	31	31	30	30	29	28	26	8
7	24	28	30	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37
24	28	31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40
28	31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40	40
31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40	40	40
32	33	34	35	35	36	36	36	36	36	36	37	37	37	37	39	39	39	39
33	34	35	35	36	36	36	36	36	37	37	37	37	37	39	39	39	39	39
34	35	35	36	36	36	36	36	37	37	37	37	37	39	39	39	39	39	39
35	35	36	36	36	36	37	37	37	37	37	37	39	39	39	39	39	39	39
36	36	36	36	36	37	37	37	37	37	37	39	39	39	39	39	39	39	39
36	36	36	37	37	37	37	37	37	37	39	38	38	38	38	38	38	38	38
36	37	37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38	38
37	37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38	38	37
37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	37	37	37	37
37	37	37	37	37	37	38	38	38	38	38	38	38	37	37	37	37	37	36
37	37	37	38	38	38	38	38	38	38	37	37	37	37	37	37	37	36	36
37	38	38	38	38	38	38	37	37	37	37	37	37	37	37	36	36	36	35
38	38	38	38	38	37	37	37	37	37	37	37	37	36	36	36	35	35	34
38	38	38	37	37	37	37	37	37	37	37	37	36	36	36	35	35	34	32
38	37	37	37	37	37	37	37	37	37	36	36	36	36	35	34	34	32	30
37	37	37	37	37	37	37	37	37	36	36	36	36	35	34	34	32	30	9
8	26	30	32	34	35	36	37	37	37	38	38	38	38	38	39	39	39	39
26	30	32	34	35	36	37	37	37	38	38	38	38	38	39	39	39	39	45
30	32	34	35	36	37	37	37	38	38	38	38	39	39	39	39	39	44	44
32	34	35	36	37	37	37	38	38	38	38	39	39	39	39	39	44	44	44
34	35	36	37	37	37	38	38	38	38	39	39	39	39	39	44	44	44	44
35	36	37	37	38	38	38	38	38	39	39	39	39	39	44	44	44	44	44
36	37	37	38	38	38	38	39	39	39	39	39	39	44	44	44	44	44	44
37	37	38	38	38	38	39	39	39	39	39	39	44	44	44	44	43	43	43
37	38	38	38	38	39	39	39	39	39	39	43	43	43	43	43	43	43	43
38	38	38	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	43

TABLE A-4 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

38	38	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	43	43
39	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	42	42	42
39	39	39	39	39	39	39	43	43	43	43	43	43	42	42	42	42	42	42
39	39	39	39	39	40	43	43	43	43	42	42	42	42	42	42	42	41	41
39	39	39	40	40	43	43	43	42	42	42	42	42	42	42	42	41	41	40
39	40	40	40	43	42	42	42	42	42	42	42	42	42	41	41	41	40	40
40	40	40	42	42	42	42	42	42	42	42	42	41	41	41	41	40	39	38
40	40	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	38	37
40	42	42	42	42	42	42	42	42	42	41	41	41	41	40	40	39	38	37	34
42	42	42	42	42	42	42	42	42	41	41	41	41	40	40	39	38	37	34	11
9	27	32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41
27	32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	49
32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	49	49
34	36	37	38	39	39	39	40	40	40	41	41	41	41	41	41	49	49	49
36	37	38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	49	49
37	38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	49	49	49
38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	48	48	48	48
39	39	40	40	40	40	41	41	41	41	41	41	48	48	48	48	48	48	48
39	40	40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48	48
40	40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48	48	48
40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48	47	47	47
41	41	41	41	41	41	41	41	48	48	48	48	48	48	47	47	47	47	47
41	41	41	41	41	41	42	48	48	48	48	48	47	47	47	47	47	47	46
41	41	41	41	42	42	48	48	48	48	47	47	47	47	47	47	46	46	46
41	41	41	42	42	48	48	48	47	47	47	47	47	47	47	46	46	46	45
41	42	42	42	48	48	47	47	47	47	47	47	47	46	46	46	45	45	44
42	42	42	48	47	47	47	47	47	47	47	47	46	46	46	45	45	44	43
42	42	47	47	47	47	47	47	47	47	47	46	46	46	45	45	44	43	41
42	47	47	47	47	47	47	47	47	46	46	46	46	45	45	44	43	41	38
47	47	47	47	47	47	47	47	46	46	46	46	45	45	44	43	41	38	12
9	29	33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43
29	33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54
33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	54
36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	54	53
38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	53	53	53
39	40	41	41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53
40	41	41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53
41	41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53
41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53	52
42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53	52	52
42	42	43	43	43	43	43	44	44	53	53	53	53	53	53	53	52	52	52	52
42	43	43	43	43	43	44	44	53	53	53	53	53	53	53	52	52	52	52	51
43	43	43	43	43	44	44	53	53	53	53	53	53	52	52	52	52	52	51	51
43	43	43	43	44	44	53	53	53	53	53	53	52	52	52	52	52	51	51	50
43	43	44	44	44	53	53	53	53	52	52	52	52	52	52	52	51	51	50	50
43	44	44	44	53	53	53	53	52	52	52	52	52	51	51	51	50	50	49
44	44	44	53	53	53	53	52	52	52	52	52	51	51	51	50	50	49	48
44	44	53	53	53	52	52	52	52	52	52	51	51	51	50	50	49	47	46
44	53	53	53	52	52	52	52	52	52	51	51	51	50	49	49	47	46	42
53	53	53	52	52	52	52	52	52	51	51	51	50	49	49	47	46	42	14

TABLE A-5

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

7	22	26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35
22	26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35
26	29	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35	35
29	30	31	32	33	33	34	34	34	34	34	34	35	35	35	35	35	35	35
30	31	32	33	33	34	34	34	34	34	35	35	35	35	35	35	35	35	35
32	32	33	33	34	34	34	34	34	35	35	35	35	35	35	35	35	35	35
32	33	33	34	34	34	34	34	35	35	35	35	35	34	34	34	34	34	34
33	34	34	34	34	34	35	35	35	35	35	35	35	34	34	34	34	34	34
34	34	34	34	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34
34	34	34	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	34
34	35	35	35	35	35	35	35	35	35	34	34	34	34	34	33	33	33	33	33
35	35	35	35	35	35	35	35	34	33	33	33	33	33	33	33	33	33	33
35	35	35	35	35	35	35	33	33	33	33	33	33	33	33	33	33	33	32
35	35	35	35	35	35	33	33	33	33	33	33	33	33	33	32	32	32	32
35	35	35	36	36	33	33	33	33	33	33	33	33	32	32	32	32	32	31
35	36	36	36	33	33	33	33	33	33	33	32	32	32	32	32	31	31	30
36	36	36	33	33	33	33	33	33	32	32	32	32	32	31	31	31	30	29
36	36	33	33	33	33	33	32	32	32	32	32	32	31	31	31	30	29	28
36	33	33	33	33	32	32	32	32	32	32	31	31	31	30	30	29	28	26
33	33	33	33	32	32	32	32	32	32	31	31	31	30	30	29	28	26	8
7	24	28	30	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37
24	28	31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40
28	31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40	40
31	32	33	34	35	35	35	36	36	36	36	36	37	37	37	37	40	40	40
32	33	34	35	35	36	36	36	36	36	36	37	37	37	37	39	39	39	39
33	34	35	35	36	36	36	36	36	37	37	37	37	37	39	39	39	39	39
34	35	35	36	36	36	36	36	37	37	37	37	37	39	39	39	39	39	39
35	35	36	36	36	36	37	37	37	37	37	37	39	39	39	39	39	39	39
36	36	36	36	36	37	37	37	37	37	37	39	39	39	39	39	39	39	39
36	36	36	37	37	37	37	37	37	37	39	38	38	38	38	38	38	38	38
36	37	37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38	38
37	37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38	38	37
37	37	37	37	37	37	37	38	38	38	38	38	38	38	38	37	37	37	37
37	37	37	37	37	37	38	38	38	38	38	36	38	37	37	37	37	37	36
37	37	37	38	38	38	38	38	38	38	37	37	37	37	37	37	37	36	36
37	38	38	38	38	38	38	37	37	37	37	37	37	37	37	36	36	36	35
38	38	38	38	38	37	37	37	37	37	37	37	37	36	36	36	35	35	34
38	38	38	37	37	37	37	37	37	37	37	37	36	36	36	35	35	34	32
38	37	37	37	37	37	37	37	37	37	36	36	36	36	35	34	34	32	30
37	37	37	37	37	37	37	37	37	36	36	36	36	35	34	34	32	30	9
8	26	30	32	34	35	36	37	37	37	38	38	38	38	38	38	39	39	39	39
26	30	32	34	35	36	37	37	37	38	38	38	38	38	38	39	39	39	39	45
30	32	34	35	36	37	37	37	38	38	38	38	38	39	39	39	39	39	44	44
32	34	35	36	37	37	37	38	38	38	38	38	39	39	39	39	39	44	44	44
34	35	36	37	37	37	38	38	38	38	39	39	39	39	39	44	44	44	44
35	36	37	37	38	38	38	38	38	39	39	39	39	39	44	44	44	44	44
36	37	37	38	38	38	38	39	39	39	39	39	39	44	44	44	44	44	44
37	37	38	38	38	38	39	39	39	39	39	39	44	44	44	44	43	43	43
37	38	38	38	38	39	39	39	39	39	39	43	43	43	43	43	43	43	43
38	38	38	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	43

TABLE A-5 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

38	38	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	43	43
39	39	39	39	39	39	39	39	43	43	43	43	43	43	43	43	42	42	42
39	39	39	39	39	39	39	43	43	43	43	43	43	42	42	42	42	42	42
39	39	39	39	39	40	43	43	43	43	42	42	42	42	42	42	42	41	41
39	39	39	40	40	43	43	43	42	42	42	42	42	42	42	42	41	41	40
39	40	40	40	43	42	42	42	42	42	42	42	42	42	41	41	41	40	40
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40	40	42	42	42	42	42	42	42	42	42	41	41	41	40	40	39	38	37
40	42	42	42	42	42	42	42	42	41	41	41	41	40	40	39	38	37	34
42	42	42	42	42	42	42	42	41	41	41	41	40	40	39	38	37	34	11
9	27	32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41
27	32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	49
32	34	36	37	38	39	39	39	40	40	40	40	41	41	41	41	41	49	49
34	36	37	38	39	39	39	40	40	40	41	41	41	41	41	41	49	49	49
36	37	38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	49	49
37	38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	49	49	49
38	39	39	40	40	40	40	41	41	41	41	41	41	49	49	48	48	48	48
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39	40	40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48	48
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40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48	47	47	47
41	41	41	41	41	41	41	41	48	48	48	48	48	48	47	47	47	47	47
41	41	41	41	41	41	42	48	48	48	48	48	48	47	47	47	47	47	47	46
41	41	41	41	42	42	48	48	48	48	47	47	47	47	47	47	46	46	46
41	41	41	42	42	48	48	48	47	47	47	47	47	47	47	46	46	46	45
41	42	42	42	48	48	47	47	47	47	47	47	47	46	46	46	45	45	44
42	42	42	48	47	47	47	47	47	47	47	47	47	46	46	46	45	45	44	43
42	42	47	47	47	47	47	47	47	47	47	46	46	46	46	45	45	44	43	41
42	47	47	47	47	47	47	47	47	47	46	46	46	46	45	45	44	43	41	38
47	47	47	47	47	47	47	47	47	46	46	46	46	45	45	44	43	41	38	12
9	29	33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	43
29	33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54
33	36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	54
36	38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	54	53
38	39	40	41	41	42	42	42	42	43	43	43	43	43	43	54	53	53	53
39	40	41	41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53
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41	41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53
41	42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53	52
42	42	42	43	43	43	43	43	43	44	53	53	53	53	53	53	53	52	52
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42	43	43	43	43	43	44	44	53	53	53	53	53	53	52	52	52	52	51
43	43	43	43	43	44	44	53	53	53	53	53	52	52	52	52	52	51	51
43	43	43	43	44	44	53	53	53	53	53	52	52	52	52	52	51	51	50
43	43	44	44	44	53	53	53	53	52	52	52	52	52	52	51	51	50	50
43	44	44	44	53	53	53	53	52	52	52	52	52	51	51	51	50	50	49
44	44	44	53	53	53	53	52	52	52	52	52	51	51	51	50	50	49	48
44	44	53	53	53	52	52	52	52	52	52	51	51	51	50	50	49	47	46
44	53	53	53	52	52	52	52	52	52	51	51	51	50	49	49	47	46	42
53	53	53	52	52	52	52	52	52	51	51	51	50	49	49	47	46	42	14

TABLE A-6

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

7	22	26	28	30	31	32	32	33	33	34	34	34	34	34	34	35	35	35
22	26	28	30	31	32	32	33	33	34	34	34	34	34	34	34	35	35	35
26	28	30	31	32	32	33	33	34	34	34	34	34	35	35	35	35	35	35
28	30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35	35	35
30	31	32	33	33	33	34	34	34	34	34	35	35	35	35	35	34	34	34
31	32	33	33	34	34	34	34	34	35	35	35	35	35	34	34	34	34	34
32	33	33	34	34	34	34	34	35	35	35	35	35	34	34	34	34	34	34
33	33	34	34	34	34	35	35	35	35	35	35	34	34	34	34	34	34	33
33	34	34	34	34	35	35	35	35	35	35	34	34	34	34	33	33	33	33
34	34	34	35	35	35	35	35	35	35	34	34	33	33	33	33	33	33	33
34	34	35	35	35	35	35	35	35	33	33	33	33	33	33	33	33	32	32
35	35	35	35	35	35	35	35	33	33	33	33	33	33	33	32	32	32	32
35	35	35	35	35	35	35	33	33	33	33	33	33	32	32	32	32	31	31
35	35	35	35	35	35	33	33	33	33	33	32	32	32	32	32	31	31	30
35	35	35	35	36	33	33	33	33	32	32	32	32	32	31	31	31	30	29
35	35	36	36	33	33	33	32	32	32	32	32	31	31	31	30	30	29	28
36	36	36	33	33	33	32	32	32	32	32	31	31	31	30	30	29	28	27
36	36	33	33	32	32	32	32	32	32	31	31	31	30	30	29	28	27	25
36	33	33	32	32	32	32	32	31	31	31	30	30	29	29	28	27	25	22
33	33	32	32	32	32	32	31	31	31	30	30	29	29	28	26	25	22	6
7	23	27	30	32	33	34	34	35	35	36	36	36	36	36	36	37	37	37
23	28	30	32	33	34	34	35	35	36	36	36	36	36	36	37	37	37	39
28	30	32	33	34	34	35	35	36	36	36	36	36	36	37	37	37	39	39
30	32	33	34	34	35	35	36	36	36	36	36	36	37	37	37	39	39	39
32	33	34	34	35	35	36	36	36	36	36	37	37	37	37	39	39	39	39
33	34	35	35	35	36	36	36	36	36	37	37	37	37	39	39	39	39	38
34	35	35	35	36	36	36	36	37	37	37	37	37	39	38	38	38	38	38
35	35	36	36	36	36	36	37	37	37	37	37	38	38	38	38	38	38	38
35	36	36	36	36	37	37	37	37	37	37	38	38	38	38	38	38	38	37
36	36	36	36	37	37	37	37	37	37	38	38	38	38	38	38	37	37	37
36	36	37	37	37	37	37	37	37	38	38	38	38	37	37	37	37	37	37
36	37	37	37	37	37	37	37	38	38	38	37	37	37	37	37	37	36	36
37	37	37	37	37	37	37	38	37	37	37	37	37	37	37	37	36	36	35
37	37	37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	36	35	35
37	37	37	37	37	37	37	37	37	37	37	37	36	36	36	36	35	35	34	34
37	37	38	38	37	37	37	37	37	37	37	36	36	36	36	35	35	34	33	32
38	38	38	37	37	37	37	37	36	36	36	36	36	35	35	35	34	33	32	31
38	38	37	37	37	37	37	36	36	36	36	36	35	35	34	34	33	32	31	29
38	37	37	37	37	37	36	36	36	36	36	35	35	34	34	33	32	31	28	25
37	37	37	37	36	36	36	36	36	36	35	35	34	34	33	32	30	28	25	7
8	25	29	32	33	35	36	36	37	37	37	38	38	38	38	38	39	39	39	
25	29	32	33	35	36	36	37	37	37	38	38	38	38	38	39	39	39	44	
29	32	33	35	36	36	37	37	38	38	38	38	38	39	39	39	39	44	44	
32	34	35	36	36	37	37	38	38	38	38	38	39	39	39	39	43	43	43	
34	35	36	36	37	37	38	38	38	38	38	39	39	39	39	43	43	43	43	
35	36	36	37	37	38	38	38	38	38	39	39	39	39	43	43	43	43	43	
36	36	37	37	38	38	38	38	39	39	39	39	39	43	43	43	43	43	43	
37	37	37	38	38	38	38	39	39	39	39	39	43	43	43	43	42	42	42	
37	38	38	38	38	39	39	39	39	39	39	43	43	42	42	42	42	42	42	
38	38	38	38	39	39	39	39	39	39	43	42	42	42	42	42	42	42	41	

TABLE A-6 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

38	38	38	39	39	39	39	39	39	42	42	42	42	42	42	42	41	41	41
38	39	39	39	39	39	39	39	42	42	42	42	42	42	41	41	41	41	40
39	39	39	39	39	39	39	42	42	42	42	42	41	41	41	41	40	40	40
39	39	39	39	39	39	42	42	42	42	41	41	41	41	41	40	40	39	39
39	39	39	39	39	42	42	42	42	41	41	41	41	40	40	40	39	39	38
39	39	39	40	42	42	42	41	41	41	41	41	40	40	40	39	38	38	37
39	40	40	42	42	41	41	41	41	41	41	40	40	39	39	38	37	36	35
40	40	42	42	41	41	41	41	41	40	40	40	39	39	38	37	36	35	32
40	42	42	41	41	41	41	41	40	40	40	39	39	38	37	36	35	32	29
42	42	41	41	41	41	41	40	40	40	39	39	38	37	36	34	32	29	8
8	26	31	34	35	37	37	38	39	39	40	40	40	40	40	41	41	41	41
26	31	34	35	37	37	38	39	39	40	40	40	40	40	41	41	41	41	48
31	34	35	37	37	38	39	39	40	40	40	40	40	41	41	41	41	48	48
34	35	37	38	38	39	39	40	40	40	40	40	41	41	41	41	48	48	48
35	37	38	38	39	39	40	40	40	40	41	41	41	41	41	48	48	48	47
37	38	38	39	39	40	40	40	40	41	41	41	41	41	48	48	47	47	47
38	38	39	39	40	40	40	40	41	41	41	41	41	47	47	47	47	47	47
38	39	39	40	40	40	40	41	41	41	41	41	47	47	47	47	47	47	47
39	39	40	40	40	41	41	41	41	41	41	47	47	47	47	47	47	46	46
40	40	40	40	41	41	41	41	41	41	47	47	47	47	47	46	46	46	46
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40	41	41	41	41	41	41	41	47	47	47	47	46	46	46	46	45	45	45
41	41	41	41	41	41	41	47	47	47	46	46	46	46	46	45	45	44	44
41	41	41	41	41	41	47	47	46	46	46	46	46	45	45	45	44	44	43
41	41	41	41	42	47	47	46	46	46	46	46	45	45	45	44	44	43	42
41	41	41	42	47	46	46	46	46	46	46	45	45	45	44	44	43	42	41
41	42	42	47	46	46	46	46	46	45	45	45	44	44	43	43	42	41	39
42	42	46	46	46	46	46	46	45	45	45	44	44	43	43	42	40	39	36
42	46	46	46	46	46	46	45	45	45	44	44	43	43	42	40	39	36	32
46	46	46	46	46	46	45	45	45	44	44	43	42	42	40	39	36	32	9
9	28	32	35	37	38	39	40	41	41	42	42	42	42	43	43	43	43	43
28	32	35	37	38	39	40	41	41	42	42	42	42	43	43	43	43	43	52
32	35	37	38	39	40	41	41	42	42	42	42	43	43	43	43	43	52	52
35	37	38	39	40	41	41	42	42	42	42	43	43	43	43	43	52	52	52
37	38	39	40	41	41	42	42	42	42	43	43	43	43	43	52	52	52	52
39	39	40	41	41	42	42	42	42	43	43	43	43	43	52	52	52	52	52
39	40	41	41	42	42	42	43	43	43	43	43	43	52	52	52	52	51	51
40	41	41	42	42	42	43	43	43	43	43	43	52	52	52	52	51	51	51
41	41	42	42	42	43	43	43	43	43	43	52	52	52	51	51	51	51	50
41	42	42	42	43	43	43	43	43	43	52	52	52	51	51	51	51	50	50
42	42	42	43	43	43	43	43	43	52	52	52	51	51	51	51	50	50	50
42	42	43	43	43	43	43	43	52	52	51	51	51	51	51	50	50	49	49
42	43	43	43	43	43	43	52	52	51	51	51	51	50	50	50	49	49	48
43	43	43	43	43	44	52	52	51	51	51	51	50	50	50	49	49	48	47
43	43	43	43	44	52	51	51	51	51	51	50	50	50	49	49	48	47	46
43	43	43	44	52	51	51	51	51	51	50	50	50	49	49	48	47	46	45
43	43	44	52	51	51	51	51	51	50	50	50	49	49	48	47	46	45	43
44	44	52	51	51	51	51	51	50	50	50	49	49	48	47	46	45	43	40
44	51	51	51	51	51	50	50	50	49	49	49	48	47	46	45	43	40	35
51	51	51	51	51	50	50	50	49	49	48	48	47	46	45	43	40	35	11

TABLE A-7

TECH 5 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

6	21	25	28	30	31	32	33	34	34	34	35	35	35	35	35	36	36	36
21	25	28	30	31	32	33	34	34	34	35	35	35	35	35	36	36	36	38
26	28	30	31	32	33	34	34	34	35	35	35	35	35	36	36	36	37	37
28	30	31	32	33	34	34	34	35	35	35	35	36	36	36	36	37	37	37
30	32	32	33	34	34	35	35	35	35	35	36	36	36	36	37	37	37	37
32	33	33	34	34	35	35	35	35	35	36	36	36	36	37	37	37	37	37
33	33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36	36	36
33	34	34	35	35	35	35	36	36	36	36	36	36	36	36	36	36	36	36
34	34	35	35	35	36	36	36	36	36	36	36	36	36	36	36	36	36	35
35	35	35	35	36	36	36	36	36	36	36	36	36	36	36	35	35	35	35
35	35	36	36	36	36	36	36	36	36	36	35	35	35	35	35	35	35	34
35	36	36	36	36	36	36	36	35	35	35	35	35	35	35	35	34	34	34
36	36	36	36	36	36	36	35	35	35	35	35	35	35	34	34	34	34	33
36	36	36	36	36	36	35	35	35	35	35	35	34	34	34	34	33	33	32
36	36	36	36	37	35	35	35	35	35	34	34	34	34	33	33	33	32	31
36	36	37	37	35	35	35	35	34	34	34	34	34	33	33	32	32	31	30
37	37	37	35	35	35	34	34	34	34	34	33	33	33	32	32	31	30	28
37	37	35	35	34	34	34	34	34	34	33	33	33	32	31	31	30	28	26
37	35	35	34	34	34	34	34	34	33	33	32	32	31	31	29	28	26	23
35	35	34	34	34	34	34	34	33	33	32	32	31	30	29	28	26	22	6
7	22	27	30	32	33	34	35	35	36	36	37	37	37	37	37	38	38	38
22	27	30	32	33	34	35	35	36	36	37	37	37	37	37	38	38	38	43
27	30	32	33	34	35	35	36	36	37	37	37	37	37	38	38	38	42	42
30	32	33	34	35	35	36	36	37	37	37	37	37	38	38	38	42	42	42
32	33	34	35	35	36	36	37	37	37	37	37	38	38	38	42	42	42	42
33	34	35	36	36	36	37	37	37	37	38	38	38	38	42	42	42	42	42
34	35	36	36	36	37	37	37	37	38	38	38	38	42	42	42	41	41	41
35	36	36	37	37	37	37	37	38	38	38	38	41	41	41	41	41	41	41
36	36	37	37	37	37	38	38	38	38	38	41	41	41	41	41	41	41	41
36	37	37	37	37	38	38	38	38	38	41	41	41	41	41	41	40	40	40
37	37	37	38	38	38	38	38	38	41	41	41	41	40	40	40	40	40	39
37	37	38	38	38	38	38	38	41	41	40	40	40	40	40	40	39	39	39
38	38	38	38	38	38	38	40	40	40	40	40	40	40	39	39	39	39	38
38	38	38	38	38	38	40	40	40	40	40	40	40	39	39	39	38	38	37
38	38	38	38	38	40	40	40	40	40	40	39	39	39	38	38	38	37	36
38	38	38	39	40	40	40	40	40	39	39	39	39	38	38	37	37	36	35
38	39	39	40	40	40	40	39	39	39	39	39	38	38	37	36	36	34	33
39	39	40	40	40	40	39	39	39	39	38	38	38	37	36	35	34	33	30
39	40	40	40	39	39	39	39	39	38	38	37	37	36	35	34	32	30	26
40	40	40	39	39	39	39	39	38	38	37	37	36	35	34	32	30	26	7
7	24	29	31	33	35	36	37	37	38	38	38	39	39	39	39	39	40	40
24	29	31	33	35	36	37	37	38	38	38	39	39	39	39	39	40	40	48
29	31	33	35	36	37	37	38	38	38	39	39	39	39	40	40	40	48	48
32	33	35	36	37	37	38	38	39	39	39	39	39	40	40	40	47	47	47
34	35	36	37	37	38	38	39	39	39	39	39	40	40	40	47	47	47	47
35	36	37	37	38	38	39	39	39	39	39	40	40	40	47	47	47	47	47
36	37	37	38	38	39	39	39	39	40	40	40	40	47	47	47	47	47	46
37	38	38	38	39	39	39	39	40	40	40	40	47	47	47	46	46	46	46
38	38	38	39	39	39	39	40	40	40	40	47	46	46	46	46	46	46	46
38	39	39	39	39	40	40	40	40	40	46	46	46	46	46	46	46	45	45

TABLE A-7 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

39	39	39	39	40	40	40	40	40	46	46	46	46	46	46	45	45	45	44
39	39	40	40	40	40	40	40	46	46	46	46	46	46	45	45	45	45	44	44
39	40	40	40	40	40	40	46	46	46	46	45	45	45	45	44	44	44	43
40	40	40	40	40	40	46	46	46	45	45	45	45	45	44	44	43	43	42
40	40	40	40	40	46	46	45	45	45	45	45	44	44	44	43	43	42	41
40	40	40	40	46	45	45	45	45	45	44	44	44	43	43	42	42	41	39
40	40	41	45	45	45	45	45	45	44	44	44	43	43	42	41	40	39	37
41	41	45	45	45	45	45	45	44	44	44	43	43	42	41	40	39	37	34
41	45	45	45	45	45	44	44	44	44	43	43	42	41	40	39	37	34	30
45	45	45	45	45	44	44	44	44	43	43	42	41	40	39	37	34	30	9
8	25	30	33	35	37	38	38	39	40	40	40	41	41	41	41	42	42	42
25	30	33	35	37	38	38	39	40	40	40	41	41	41	41	42	42	42	53
30	33	35	37	38	38	39	40	40	40	41	41	41	41	42	42	42	53	53
33	35	37	38	38	39	40	40	40	41	41	41	41	42	42	42	53	53	52
35	37	38	39	39	40	40	40	41	41	41	41	42	42	42	53	52	52	52
37	38	39	39	40	40	41	41	41	41	41	42	42	42	52	52	52	52	52
38	39	39	40	40	41	41	41	41	42	42	42	42	52	52	52	52	52	52
39	39	40	40	41	41	41	41	42	42	42	42	52	52	52	52	52	51	51
39	40	40	41	41	41	41	42	42	42	42	52	52	52	52	51	51	51	51
40	40	41	41	41	41	42	42	42	42	52	52	52	51	51	51	51	50	50
40	41	41	41	42	42	42	42	42	52	52	51	51	51	51	51	50	50	50
41	41	41	42	42	42	42	42	52	51	51	51	51	51	50	50	50	49	49
41	41	42	42	42	42	42	51	51	51	51	51	51	50	50	50	49	49	48
42	42	42	42	42	42	51	51	51	51	51	50	50	50	49	49	48	48	47
42	42	42	42	42	51	51	51	51	51	50	50	50	49	49	48	48	47	46
42	42	42	42	51	51	51	51	50	50	50	50	49	49	48	47	47	45	44
42	42	42	51	51	51	51	50	50	50	49	49	49	48	47	46	45	44	42
42	43	51	51	51	51	50	50	50	49	49	49	48	47	46	45	44	41	38
43	51	51	51	51	50	50	50	49	49	48	48	47	46	45	43	41	38	34
51	51	51	51	50	50	50	49	49	48	48	47	46	45	43	41	38	33	10
8	27	32	35	37	38	39	40	41	42	42	42	43	43	43	44	44	44	44
27	32	35	37	38	39	40	41	42	42	42	43	43	43	44	44	44	44	58
32	35	37	38	39	40	41	42	42	42	43	43	43	44	44	44	44	58	58
35	37	38	40	40	41	42	42	42	43	43	43	44	44	44	44	58	58	58
37	38	40	40	41	42	42	42	43	43	43	44	44	44	44	58	58	58	57
38	40	40	41	42	42	43	43	43	43	44	44	44	44	58	58	57	57	57
40	40	41	42	42	43	43	43	43	44	44	44	44	58	58	57	57	57	57
40	41	42	42	43	43	43	43	44	44	44	44	58	57	57	57	57	57	56
41	42	42	43	43	43	43	44	44	44	44	58	57	57	57	57	56	56	56
42	42	43	43	43	43	44	44	44	44	57	57	57	57	57	56	56	56	55
42	43	43	43	44	44	44	44	44	57	57	57	57	57	56	56	56	55	55
43	43	43	44	44	44	44	44	57	57	57	57	56	56	56	55	55	54	54
43	43	44	44	44	44	44	57	57	57	57	56	56	56	55	55	54	54	53
43	44	44	44	44	44	57	57	57	57	56	56	56	55	55	54	54	53	52
44	44	44	44	44	57	57	57	57	56	56	56	55	55	54	53	53	52	50
44	44	44	44	57	57	57	56	56	56	56	55	55	54	53	53	52	50	49
44	44	44	57	57	57	56	56	56	55	55	55	54	53	52	51	50	48	46
44	44	57	57	57	56	56	56	55	55	55	54	53	52	51	50	48	46	43
44	57	57	57	56	56	56	55	55	55	54	53	52	51	50	48	46	43	37
57	57	57	56	56	56	55	55	54	54	53	52	51	50	48	46	42	37	11

TABLE A-8

TECH 4 I/M CREDITS ARE FOR THE 81 LDGVS 73.2% CLC;26.8% OLC;31.6% WAIVER

5	19	24	27	29	30	31	32	33	33	34	34	34	35	35	35	35	35	35
19	24	27	29	30	31	32	33	33	34	34	34	35	35	35	35	35	35	37
24	27	29	30	31	32	33	33	34	34	34	35	35	35	35	35	35	37	37
27	29	30	31	32	33	33	34	34	34	35	35	35	35	35	35	37	37	37
29	30	32	32	33	33	34	34	35	35	35	35	35	35	36	37	37	37	37
31	32	32	33	34	34	34	35	35	35	35	35	35	36	37	36	36	36	36
32	33	33	34	34	34	35	35	35	35	35	36	36	36	36	36	36	36	36
33	33	34	34	35	35	35	35	35	36	36	36	36	36	36	36	36	36	36
33	34	34	35	35	35	35	35	36	36	36	36	36	36	36	35	35	35	35
34	34	35	35	35	35	35	36	36	36	36	36	35	35	35	35	35	35	35
35	35	35	35	36	36	36	36	36	35	35	35	35	35	35	35	34	34	34
35	35	36	36	36	36	36	36	35	35	35	35	35	35	34	34	34	34	33
35	36	36	36	36	36	36	35	35	35	35	35	34	34	34	34	33	33	32
36	36	36	36	36	36	35	35	35	34	34	34	34	34	33	33	33	32	32
36	36	36	36	36	35	35	34	34	34	34	34	33	33	33	32	32	31	30
36	36	36	37	35	34	34	34	34	34	34	33	33	33	32	32	31	30	29
37	37	37	34	34	34	34	34	34	33	33	33	32	32	31	31	30	29	27
37	37	34	34	34	34	34	34	33	33	33	32	32	31	31	30	28	27	25
37	34	34	34	34	34	34	33	33	33	32	32	31	30	30	28	27	24	21
34	34	34	34	34	33	33	33	33	32	32	31	30	29	28	27	24	21	6
6	21	26	29	31	32	34	35	35	36	36	37	37	37	37	38	38	38	38
21	26	29	31	32	34	35	35	36	36	37	37	37	37	38	38	38	38	43
26	29	31	33	34	35	35	36	36	37	37	37	37	38	38	38	38	43	43
29	31	33	34	35	35	36	36	37	37	37	37	38	38	38	38	43	43	42
31	33	34	35	35	36	36	37	37	37	38	38	38	38	38	42	42	42	42
33	34	35	36	36	36	37	37	37	38	38	38	38	38	42	42	42	42	42
34	35	36	36	37	37	37	37	38	38	38	38	38	42	42	42	42	42	41
35	36	36	37	37	37	38	38	38	38	38	38	42	42	41	41	41	41	41
36	36	37	37	37	38	38	38	38	38	38	41	41	41	41	41	41	41	41
37	37	37	38	38	38	38	38	38	39	41	41	41	41	41	41	40	40	40
37	37	38	38	38	38	38	39	39	41	41	41	41	41	40	40	40	40	39
38	38	38	38	38	39	39	39	41	41	41	40	40	40	40	40	39	39	39
38	38	38	38	39	39	39	41	40	40	40	40	40	40	39	39	39	38	38
38	38	39	39	39	39	40	40	40	40	40	40	39	39	39	38	38	37	37
39	39	39	39	39	40	40	40	40	40	40	39	39	39	38	38	37	36	35
39	39	39	39	40	40	40	40	40	39	39	39	38	38	38	37	36	35	34
39	39	39	40	40	40	40	39	39	39	39	38	38	37	37	36	35	34	32
39	39	40	40	40	40	39	39	39	39	38	38	37	37	36	35	33	31	29
39	40	40	40	39	39	39	39	38	38	38	37	36	36	35	33	31	29	25
40	40	40	39	39	39	39	38	38	38	37	36	36	35	33	31	29	25	7
6	23	28	31	33	35	36	37	38	38	39	39	40	40	40	40	40	41	41
23	28	31	33	35	36	37	38	38	39	39	40	40	40	40	40	41	41	49
28	31	33	35	36	37	38	38	39	39	40	40	40	40	40	41	41	48	48
31	33	35	36	37	38	38	39	39	40	40	40	40	41	41	41	48	48	48
33	35	36	37	38	38	39	39	40	40	40	40	41	41	41	48	48	48	48
35	36	37	38	39	39	39	40	40	40	40	41	41	41	48	48	48	47	47
36	37	38	39	39	39	40	40	40	41	41	41	41	48	47	47	47	47	47
37	38	39	39	40	40	40	40	41	41	41	41	47	47	47	47	47	47	46
38	39	39	40	40	40	40	41	41	41	41	47	47	47	47	47	46	46	46
39	39	40	40	40	41	41	41	41	41	47	47	47	47	46	46	46	46	45

TABLE A-8 (CONT.)

TECH 4 I/M CREDITS ARE FOR THE 81 LDGVS 73.2% CLC;26.8% OLC;31.6% WAIVER

40 40 40 40 41 41 41 41 41 47 47 47 46 46 46 46 45 45 45
40 40 41 41 41 41 41 41 47 46 46 46 46 46 46 45 45 45 44 44
40 41 41 41 41 41 41 46 46 46 46 46 46 46 45 45 45 44 44 43
41 41 41 41 41 42 46 46 46 46 46 46 45 45 45 44 44 43 43 42
41 41 41 42 42 46 46 46 46 45 45 45 45 44 44 43 42 42 40
41 42 42 42 46 46 46 46 45 45 45 44 44 44 43 42 41 40 39
42 42 42 46 46 46 45 45 45 45 44 44 43 43 42 41 40 38 36
42 42 46 46 46 45 45 45 45 44 44 43 43 42 41 40 38 36 33
42 46 46 45 45 45 45 44 44 44 43 43 42 41 40 38 36 33 28
46 46 45 45 45 45 44 44 44 43 43 42 41 40 38 36 33 28 8
7 24 30 33 35 37 38 39 40 41 41 42 42 43 43 43 43 43 44
24 30 33 35 37 38 39 40 41 41 42 42 43 43 43 43 43 44 54
30 33 35 37 38 39 40 41 41 42 42 43 43 43 43 43 44 54 54
33 36 37 38 39 40 41 41 42 42 43 43 43 43 44 44 54 54 54
36 37 39 40 40 41 42 42 42 43 43 43 43 44 44 54 54 53 53
37 39 40 40 41 42 42 42 43 43 43 43 44 44 54 53 53 53 53
39 40 40 41 42 42 42 43 43 43 43 44 44 53 53 53 53 53 52
40 41 41 42 42 43 43 43 43 44 44 44 53 53 53 53 52 52 52
41 41 42 42 43 43 43 43 44 44 44 53 53 53 53 52 52 52 51
41 42 42 43 43 43 43 44 44 44 53 53 53 52 52 52 52 51 51
42 42 43 43 43 44 44 44 44 53 53 52 52 52 52 51 51 51 50
42 43 43 43 44 44 44 44 53 52 52 52 52 51 51 51 50 50 49
43 43 43 44 44 44 44 52 52 52 52 52 51 51 51 50 50 49 48
43 44 44 44 44 44 52 52 52 52 52 51 51 50 50 49 49 48 47
44 44 44 44 44 52 52 52 52 51 51 51 50 50 49 49 48 47 45
44 44 44 44 52 52 52 52 51 51 51 50 50 49 48 48 47 45 43
44 44 44 52 52 52 51 51 51 51 50 50 49 48 47 46 45 43 41
44 45 52 52 52 51 51 51 50 50 50 49 48 47 46 45 43 41 37
45 52 52 52 51 51 51 50 50 49 49 48 47 46 45 43 41 37 32
52 52 52 51 51 51 50 50 49 49 48 47 46 45 43 41 37 32 9
7 26 32 35 38 39 41 42 43 44 44 45 45 45 46 46 46 46 47
26 32 35 38 39 41 42 43 44 44 45 45 45 46 46 46 46 47 60
32 35 38 39 41 42 43 44 44 45 45 45 46 46 46 46 47 60 59
35 38 40 41 42 43 44 44 45 45 45 46 46 46 46 47 60 59 59
38 40 41 42 43 44 44 45 45 45 46 46 46 46 47 59 59 59 59
40 41 42 43 44 44 45 45 45 46 46 46 46 47 59 59 59 59 58
41 42 43 44 44 45 45 46 46 46 46 47 47 59 59 59 59 58 58
42 43 44 44 45 45 46 46 46 46 47 47 59 59 59 58 58 58 57
43 44 44 45 45 46 46 46 46 47 47 59 59 59 58 58 58 57 57
44 44 45 45 46 46 46 46 47 47 59 59 59 58 58 58 57 57 56
44 45 45 46 46 46 46 47 47 59 59 58 58 58 57 57 57 56 55
45 45 46 46 46 46 47 47 59 59 58 58 58 57 57 56 56 55 54
45 46 46 46 47 47 47 59 59 58 58 58 57 57 56 56 55 54 53
46 46 46 47 47 47 59 58 58 58 58 57 57 56 56 55 54 53 52
46 46 47 47 47 59 58 58 58 58 57 57 56 56 55 54 53 52 50
46 47 47 47 59 58 58 58 57 57 57 56 56 55 54 53 52 50 48
47 47 47 59 58 58 58 57 57 57 56 55 55 54 53 52 50 48 45
47 47 59 58 58 58 57 57 57 56 55 55 54 53 52 50 48 45 42
47 58 58 58 58 57 57 57 56 55 55 54 53 52 50 48 45 41 36
58 58 58 58 57 57 56 56 55 55 54 53 52 50 48 45 41 36 10

TABLE A-9

TECH 5 I/M CREDITS ARE FOR THE 82 LDGVS 73.2% CLC;26.8% OLC;21.6% WAIVER

6	21	25	28	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36
21	26	28	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	38
26	28	30	31	32	33	34	34	35	35	35	35	35	36	36	36	36	38	38
28	30	32	33	33	34	34	35	35	35	35	36	36	36	36	36	38	38	38
30	32	33	33	34	34	35	35	35	35	36	36	36	36	36	38	38	38	38
32	33	33	34	34	35	35	35	36	36	36	36	36	36	37	37	37	37	37
33	34	34	35	35	35	35	36	36	36	36	36	36	37	37	37	37	37	37
34	34	35	35	35	36	36	36	36	36	36	37	37	37	37	37	37	37	37
34	35	35	35	36	36	36	36	36	36	36	37	37	37	37	37	36	36	36
35	35	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
35	36	36	36	36	36	36	36	37	36	36	36	36	36	36	36	36	36	35
36	36	36	36	36	37	37	37	36	36	36	36	36	36	36	35	35	35	35
36	36	36	37	37	37	37	36	36	36	36	35	35	35	35	35	35	35	34
36	37	37	37	37	37	36	36	35	35	35	35	35	35	35	34	34	34	33
37	37	37	37	37	35	35	35	35	35	35	35	35	35	34	34	34	34	33	33
37	37	37	37	35	35	35	35	35	35	35	34	34	34	34	33	33	32	31
37	37	37	35	35	35	35	35	35	35	34	34	34	34	33	33	32	31	30
37	37	35	35	35	35	35	35	34	34	34	34	33	33	32	32	31	30	28
37	35	35	35	35	35	34	34	34	34	34	33	33	32	32	31	29	27	24
35	35	35	35	35	34	34	34	34	34	33	33	32	32	31	29	27	24	7
7	23	28	31	32	34	35	36	36	37	37	37	38	38	38	38	38	39	39
23	28	31	32	34	35	36	36	37	37	37	38	38	38	38	38	39	39	44
28	31	33	34	35	36	36	37	37	38	38	38	38	38	38	39	39	44	44
31	33	34	35	36	36	37	37	38	38	38	38	38	39	39	39	44	44	44
33	34	35	36	36	37	37	38	38	38	38	38	39	39	39	44	44	44	44
34	35	36	37	37	37	38	38	38	38	39	39	39	39	43	43	43	43	43
35	36	37	37	38	38	38	38	38	39	39	39	39	43	43	43	43	43	43
36	37	37	38	38	38	38	39	39	39	39	39	43	43	43	43	43	43	43
37	37	38	38	38	38	39	39	39	39	39	43	43	42	42	42	42	42	42
38	38	38	38	39	39	39	39	39	39	42	42	42	42	42	42	42	42	42
38	38	39	39	39	39	39	39	39	42	42	42	42	42	42	42	42	41	41
38	39	39	39	39	39	39	39	42	42	42	42	42	41	41	41	41	41	41
39	39	39	39	39	39	39	42	42	42	41	41	41	41	41	41	41	40	40
39	39	39	39	40	40	42	41	41	41	41	41	41	41	41	40	40	40	39
39	39	40	40	40	41	41	41	41	41	41	41	41	40	40	40	39	39	38
40	40	40	40	41	41	41	41	41	41	41	40	40	40	39	39	38	38	37
40	40	40	41	41	41	41	41	41	40	40	40	40	39	39	38	37	36	35
40	40	41	41	41	41	41	40	40	40	40	39	39	39	38	37	36	35	32
40	41	41	41	41	41	40	40	40	40	39	39	38	38	37	36	34	32	29
41	41	41	41	41	40	40	40	40	39	39	38	38	37	36	34	32	29	9
7	25	30	33	35	36	37	38	39	39	40	40	40	41	41	41	41	41	42
25	30	33	35	36	37	38	39	39	40	40	41	41	41	41	41	41	42	50
30	33	35	36	37	38	39	39	40	40	41	41	41	41	41	41	42	50	50
33	35	36	38	38	39	40	40	40	41	41	41	41	41	41	42	50	50	50
35	37	38	38	39	40	40	40	41	41	41	41	41	42	42	49	49	49	49
37	38	39	39	40	40	40	41	41	41	41	41	42	42	49	49	49	49	49
38	39	39	40	40	41	41	41	41	41	42	42	42	49	49	49	49	49	49
39	39	40	40	41	41	41	41	41	42	42	42	49	49	49	49	49	48	48
40	40	40	41	41	41	41	42	42	42	42	49	49	48	48	48	48	48	48
40	41	41	41	41	41	42	42	42	42	48	48	48	48	48	48	48	48	47

TABLE A-9 (CONT.)

TECH 5 I/M CREDITS ARE FOR THE 82 LDGVS 73.2% CLC;26.8% OLC;21.6% WAIVER

41	41	41	41	42	42	42	42	42	48	48	48	48	48	48	48	47	47	47
41	41	42	42	42	42	42	42	48	48	48	48	48	47	47	47	47	47	46
41	42	42	42	42	42	42	48	48	48	48	47	47	47	47	47	46	46	46
42	42	42	42	42	42	48	48	47	47	47	47	47	47	46	46	46	45	45
42	42	42	42	42	48	47	47	47	47	47	47	46	46	46	45	45	44	43
42	42	42	43	47	47	47	47	47	47	47	46	46	46	45	45	44	43	42
43	43	43	47	47	47	47	47	47	46	46	46	46	45	45	44	43	42	40
43	43	47	47	47	47	47	47	46	46	46	45	45	44	44	43	42	40	37
43	47	47	47	47	47	46	46	46	46	45	45	44	44	43	41	40	37	33
47	47	47	47	47	46	46	46	46	45	45	44	44	43	41	40	37	33	10
8	27	32	35	37	39	40	41	42	42	43	43	43	44	44	44	44	44	45
27	32	35	37	39	40	41	42	42	43	43	43	44	44	44	44	44	45	56
32	35	37	39	40	41	42	42	43	43	43	44	44	44	44	44	45	56	56
35	37	39	40	41	42	42	43	43	43	44	44	44	44	44	45	56	56	55
38	39	40	41	42	42	43	43	43	44	44	44	44	44	45	55	55	55	55
39	40	41	42	42	43	43	44	44	44	44	44	45	45	55	55	55	55	55
40	41	42	42	43	43	44	44	44	44	44	45	45	55	55	55	55	55	55
41	42	43	43	43	44	44	44	44	44	45	45	55	55	55	55	54	54	54
42	43	43	43	44	44	44	44	45	45	45	55	55	55	54	54	54	54	54
43	43	43	44	44	44	44	45	45	45	55	55	54	54	54	54	54	53	53
43	44	44	44	44	45	45	45	45	54	54	54	54	54	54	54	53	53	53
44	44	44	44	45	45	45	45	54	54	54	54	54	54	53	53	53	52	52
44	44	45	45	45	45	45	54	54	54	54	54	53	53	53	53	52	52	51
44	45	45	45	45	45	54	54	54	54	53	53	53	53	52	52	52	51	50
45	45	45	45	45	54	54	54	54	53	53	53	53	52	52	51	51	50	49
45	45	45	45	54	54	54	53	53	53	53	52	52	52	51	51	50	49	47
45	45	45	54	54	54	53	53	53	53	52	52	52	51	50	50	49	47	45
45	46	54	54	53	53	53	53	53	52	52	51	51	50	49	48	47	45	42
46	54	54	53	53	53	53	53	52	52	51	51	50	49	48	47	45	42	37
54	54	53	53	53	53	53	52	52	51	51	50	49	48	47	45	42	37	11
8	29	34	37	40	41	43	44	44	45	45	46	46	47	47	47	47	48	48
29	34	38	40	41	43	44	44	45	45	46	46	47	47	47	47	48	48	62
34	38	40	41	43	44	44	45	46	46	46	47	47	47	47	48	48	62	62
38	40	41	43	44	44	45	46	46	46	47	47	47	47	48	48	62	61	61
40	42	43	44	44	45	46	46	46	47	47	47	47	48	48	62	61	61	61
42	43	44	44	45	46	46	46	47	47	47	47	48	48	61	61	61	61	61
43	44	45	45	46	46	46	47	47	47	47	48	48	61	61	61	61	61	60
44	45	45	46	46	46	47	47	47	47	48	48	61	61	61	61	60	60	60
45	45	46	46	47	47	47	47	48	48	48	61	61	61	61	60	60	60	59
45	46	46	47	47	47	47	48	48	48	61	61	61	60	60	60	60	59	59
46	46	47	47	47	47	48	48	48	61	61	61	60	60	60	60	59	59	58
46	47	47	47	47	48	48	48	61	61	60	60	60	60	59	59	59	58	58
47	47	47	47	48	48	48	61	61	60	60	60	60	59	59	59	58	57	57
47	47	48	48	48	48	61	61	60	60	60	60	59	59	58	58	57	57	56
47	48	48	48	48	61	60	60	60	60	60	59	59	58	58	57	57	56	54
48	48	48	48	61	60	60	60	60	59	59	59	58	58	57	56	55	54	53
48	48	48	61	60	60	60	60	59	59	59	58	58	57	56	55	54	53	50
48	48	61	60	60	60	60	59	59	59	58	58	57	56	55	54	52	50	47
48	60	60	60	60	60	59	59	59	58	58	57	56	55	54	52	50	47	42
60	60	60	60	60	59	59	59	58	58	57	56	55	54	52	50	47	42	13

TABLE A-10

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

6	21	25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35
21	25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	37
25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	37	37
28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	36	36	36
30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	36	36	36	36
31	32	33	33	34	34	34	35	35	35	35	35	35	35	36	36	36	36	35
32	33	34	34	34	35	35	35	35	35	35	35	36	36	36	36	35	35	35
33	34	34	34	35	35	35	35	35	35	36	36	36	36	35	35	35	35	34
34	34	34	35	35	35	35	35	36	36	36	35	35	35	35	35	35	34	34
34	35	35	35	35	35	35	35	36	36	36	35	35	35	35	35	34	34	34	33
35	35	35	35	35	36	36	36	36	35	35	35	35	34	34	34	33	33	33
35	35	35	36	36	36	36	36	35	35	35	34	34	34	34	33	33	32	32
35	36	36	36	36	36	36	35	35	34	34	34	34	33	33	33	32	31	31
36	36	36	36	36	36	35	35	34	34	34	34	33	33	32	32	31	30	29
36	36	36	36	36	35	34	34	34	34	33	33	33	32	32	31	30	29	28
36	36	36	36	34	34	34	34	34	33	33	33	32	31	31	30	29	28	26
36	36	36	34	34	34	34	33	33	33	32	32	31	31	30	29	28	26	24
36	36	34	34	34	34	33	33	33	32	32	31	31	30	29	27	26	24	21
37	34	34	34	34	33	33	33	32	32	31	30	30	29	27	26	24	21	17
34	34	34	34	33	33	33	32	32	31	30	30	29	27	26	24	21	17	4
6	22	27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	37	38
22	27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	38	38	41
27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	38	38	41	41
30	32	33	34	35	35	36	36	37	37	37	37	37	37	38	38	41	41	41
32	33	34	35	35	36	36	37	37	37	37	37	37	38	38	41	41	41	40
33	34	35	36	36	36	37	37	37	37	37	38	38	38	41	40	40	40	40
34	35	36	36	36	37	37	37	37	37	38	38	38	40	40	40	40	40	39
35	36	36	37	37	37	37	37	38	38	38	38	40	40	40	40	39	39	39
36	36	37	37	37	37	37	38	38	38	38	40	40	40	40	39	39	39	38
36	37	37	37	37	38	38	38	38	38	40	40	40	39	39	39	38	38	38
37	37	37	38	38	38	38	38	38	40	40	39	39	39	39	38	38	37	37
37	37	38	38	38	38	38	38	40	39	39	39	39	38	38	38	37	37	36
38	38	38	38	38	38	38	39	39	39	39	39	38	38	37	37	36	36	35
38	38	38	38	38	38	39	39	39	39	38	38	38	37	37	36	35	35	33
38	38	38	38	38	39	39	39	39	38	38	38	37	37	36	35	34	33	32
38	38	38	39	39	39	39	38	38	38	37	37	36	36	35	34	33	32	30
38	39	39	39	39	39	38	38	38	37	37	36	36	35	34	33	31	30	27
39	39	39	39	39	38	38	38	37	37	36	36	35	34	33	31	30	27	24
39	39	39	38	38	38	38	37	37	36	35	35	34	33	31	29	27	24	20
39	39	38	38	38	38	37	37	36	35	35	34	33	31	29	27	24	20	5
7	24	29	32	34	35	36	37	37	38	38	39	39	39	39	40	40	40	40
24	29	32	34	35	36	37	37	38	38	39	39	39	39	40	40	40	40	46
29	32	34	35	36	37	38	38	38	39	39	39	39	40	40	40	40	46	46
32	34	35	36	37	38	38	38	39	39	39	39	40	40	40	40	46	45	45
34	35	36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	45
35	36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	45	44
36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	44	44	44
37	38	38	39	39	39	40	40	40	40	40	40	45	45	45	44	44	44	43
38	38	39	39	39	40	40	40	40	40	40	45	45	44	44	44	44	43	43
39	39	39	39	40	40	40	40	40	40	45	44	44	44	44	43	43	42	42

TABLE A-10 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

39	39	40	40	40	40	40	40	40	44	44	44	44	43	43	43	42	42	41
39	40	40	40	40	40	40	40	44	44	44	44	43	43	43	42	42	41	40
40	40	40	40	40	40	41	44	44	44	43	43	43	42	42	41	41	40	39
40	40	40	40	41	41	44	44	44	43	43	43	42	42	41	40	40	39	37
40	40	41	41	41	44	44	44	43	43	43	42	42	41	40	39	38	37	36
41	41	41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	36	34
41	41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31
41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27
41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27	22
44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27	22	6
7	26	31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42
26	31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	51
31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	50	50
34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	50	50	50
36	37	38	39	40	40	41	41	41	42	42	42	42	42	43	50	50	50	49
37	38	39	40	40	41	41	41	42	42	42	42	42	43	50	50	50	49	49
39	39	40	40	41	41	42	42	42	42	42	42	43	50	50	49	49	49	48
39	40	41	41	41	42	42	42	42	42	43	43	50	50	49	49	49	48	48
40	41	41	41	42	42	42	42	42	43	43	50	49	49	49	48	48	48	47
41	41	41	42	42	42	42	42	43	43	50	49	49	49	48	48	47	47	46
41	41	42	42	42	42	43	43	43	49	49	49	49	48	48	47	47	46	45
42	42	42	42	42	43	43	43	49	49	49	48	48	48	47	47	46	45	44
42	42	42	43	43	43	43	49	49	49	48	48	48	47	46	46	45	44	43
42	42	43	43	43	43	49	49	49	48	48	47	47	46	46	45	44	43	41
43	43	43	43	43	49	49	48	48	48	47	47	46	46	45	44	43	41	40
43	43	43	43	49	49	48	48	48	47	47	46	45	45	44	43	41	39	37
43	43	43	49	49	48	48	48	47	47	46	45	45	44	42	41	39	37	34
43	43	49	49	48	48	48	47	47	46	45	45	44	42	41	39	37	34	30
43	49	49	48	48	48	47	47	46	45	44	43	42	41	39	37	34	30	25
49	49	48	48	48	47	47	46	45	44	43	42	41	39	37	34	30	25	6
8	27	33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45
27	33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55
33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55
36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55	54
38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55	54	54
39	41	41	42	43	43	44	44	44	44	45	45	45	45	55	55	54	54	53
41	41	42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53
41	42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53	52
42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53	52	51
43	43	44	44	44	45	45	45	45	45	55	54	54	53	53	53	52	51	51
43	44	44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	51	50
44	44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	50	48
44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47
44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45
45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45	43
45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45	43	41
45	45	45	54	54	53	53	53	52	52	51	50	49	48	47	45	43	41	38
45	45	54	54	53	53	53	52	52	51	50	49	48	47	45	43	41	38	33
46	54	54	53	53	53	52	51	51	50	49	48	47	45	43	41	38	33	27
54	54	53	53	53	52	51	51	50	49	48	47	45	43	41	38	33	27	7

TABLE A-11

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

6	21	25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	35
21	25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	35	37
25	28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	35	37	37
28	30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	35	36	36	36
30	31	32	33	33	34	34	34	35	35	35	35	35	35	35	35	36	36	36	36
31	32	33	33	34	34	34	35	35	35	35	35	35	35	35	36	36	36	36	35
32	33	34	34	34	35	35	35	35	35	35	35	35	36	36	36	36	35	35	35
33	34	34	34	35	35	35	35	35	35	35	36	36	36	36	35	35	35	35	34
34	34	34	35	35	35	35	35	36	36	36	35	35	35	35	35	35	35	34	34
34	35	35	35	35	35	35	36	36	36	35	35	35	35	35	34	34	34	33	
35	35	35	35	35	36	36	36	36	35	35	35	35	34	34	34	33	33	33	
35	35	35	36	36	36	36	36	35	35	35	34	34	34	34	33	33	32	32	
35	36	36	36	36	36	36	35	35	34	34	34	34	33	33	33	32	31	31	
36	36	36	36	36	36	35	35	34	34	34	34	33	33	32	32	31	30	29	
36	36	36	36	36	35	34	34	34	34	33	33	33	32	32	31	30	29	28	
36	36	36	36	34	34	34	34	34	33	33	33	32	31	31	30	29	28	26	
36	36	36	34	34	34	34	33	33	33	32	32	31	31	30	29	28	26	24	
36	36	34	34	34	34	33	33	33	32	32	31	31	30	29	27	26	24	21	
37	34	34	34	34	33	33	33	32	32	31	30	30	29	27	26	24	21	17	
34	34	34	34	33	33	33	32	32	31	30	30	29	27	26	24	21	17	4	
6	22	27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	37	38	
22	27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	38	38	41	
27	30	32	33	34	35	35	36	36	36	37	37	37	37	37	38	38	41	41	
30	32	33	34	35	35	36	36	37	37	37	37	37	37	38	38	41	41	41	
32	33	34	35	35	36	36	37	37	37	37	37	37	38	38	41	41	41	40	
33	34	35	36	36	36	37	37	37	37	37	38	38	38	41	40	40	40	40	
34	35	36	36	36	37	37	37	37	37	38	38	38	40	40	40	40	40	39	
35	36	36	37	37	37	37	37	38	38	38	38	40	40	40	40	39	39	39	
36	36	37	37	37	37	37	38	38	38	38	40	40	40	40	39	39	39	38	
36	37	37	37	37	38	38	38	38	38	40	40	40	39	39	39	38	38	38	
37	37	37	38	38	38	38	38	38	40	40	39	39	39	39	38	38	37	37	
37	37	38	38	38	38	38	38	40	39	39	39	39	38	38	38	37	37	36	
38	38	38	38	38	38	38	39	39	39	39	39	38	38	37	37	36	36	35	
38	38	38	38	38	38	39	39	39	39	38	38	38	37	37	36	35	35	33	
38	38	38	38	38	39	39	39	39	38	38	38	37	37	36	35	34	33	32	
38	38	38	39	39	39	39	38	38	38	37	37	36	36	35	34	33	32	30	
38	39	39	39	39	39	38	38	38	37	37	36	36	35	34	33	31	30	27	
39	39	39	39	39	38	38	38	37	37	36	36	35	34	33	31	30	27	24	
39	39	39	38	38	38	38	37	37	36	35	35	34	33	31	29	27	24	20	
39	39	38	38	38	38	37	37	36	35	35	34	33	31	29	27	24	20	5	
7	24	29	32	34	35	36	37	37	38	38	39	39	39	39	40	40	40	40	
24	29	32	34	35	36	37	37	38	38	39	39	39	39	40	40	40	40	46	
29	32	34	35	36	37	38	38	38	39	39	39	39	40	40	40	40	46	46	
32	34	35	36	37	38	38	38	39	39	39	39	40	40	40	40	46	45	45	
34	35	36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	45	
35	36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	45	44	
36	37	38	38	39	39	39	39	40	40	40	40	40	45	45	45	44	44	44	
37	38	38	39	39	39	40	40	40	40	40	40	45	45	45	44	44	44	43	
38	38	39	39	39	40	40	40	40	40	40	45	45	44	44	44	44	43	43	
39	39	39	39	40	40	40	40	40	40	45	44	44	44	44	43	43	42	42	

TABLE A-11 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

39	39	40	40	40	40	40	40	40	44	44	44	44	43	43	43	42	42	41
39	40	40	40	40	40	40	40	44	44	44	44	43	43	43	42	42	41	40
40	40	40	40	40	40	41	44	44	44	43	43	43	42	42	41	41	40	39
40	40	40	40	41	41	44	44	44	43	43	43	42	42	41	40	40	39	37
40	40	41	41	41	44	44	44	43	43	43	42	42	41	40	39	38	37	36
41	41	41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	36	34
41	41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31
41	41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27
41	44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27	22
44	44	43	43	43	42	42	41	41	40	39	38	37	35	33	31	27	22	6
7	26	31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42
26	31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	51
31	34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	50	50
34	36	37	38	39	40	40	41	41	41	42	42	42	42	42	42	50	50	50
36	37	38	39	40	40	41	41	41	42	42	42	42	42	43	50	50	50	49
37	38	39	40	40	41	41	41	42	42	42	42	42	43	50	50	50	49	49
39	39	40	40	41	41	42	42	42	42	42	42	43	50	50	49	49	49	48
39	40	41	41	41	42	42	42	42	42	43	43	50	50	49	49	49	48	48
40	41	41	41	42	42	42	42	42	43	43	50	49	49	49	48	48	48	47
41	41	41	42	42	42	42	42	43	43	50	49	49	49	48	48	47	47	46
41	41	42	42	42	42	43	43	43	49	49	49	49	48	48	47	47	46	45
42	42	42	42	42	43	43	43	49	49	49	48	48	48	47	47	46	45	44
42	42	42	43	43	43	43	49	49	49	48	48	48	47	46	46	45	44	43
42	42	43	43	43	43	49	49	49	48	48	47	47	46	46	45	44	43	41
43	43	43	43	43	49	49	48	48	48	47	47	46	46	45	44	43	41	40
43	43	43	43	49	49	48	48	48	47	47	46	45	45	44	43	41	39	37
43	43	43	49	49	48	48	48	47	47	46	45	45	44	42	41	39	37	34
43	43	49	49	48	48	48	47	47	46	45	45	44	42	41	39	37	34	30
43	49	49	48	48	48	47	47	46	45	44	43	42	41	39	37	34	30	25
49	49	48	48	48	47	47	46	45	44	43	42	41	39	37	34	30	25	6
8	27	33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45
27	33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55
33	36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55
36	38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55	54
38	39	40	41	42	43	43	43	44	44	44	45	45	45	45	55	55	54	54
39	41	41	42	43	43	44	44	44	44	45	45	45	45	55	55	54	54	53
41	41	42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53
41	42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53	52
42	43	43	44	44	44	44	45	45	45	45	55	54	54	54	53	53	52	51
43	43	44	44	44	45	45	45	45	45	55	54	54	53	53	53	52	51	51
43	44	44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	51	50
44	44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	50	48
44	44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47
44	45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45
45	45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45	43
45	45	45	45	54	54	54	53	53	52	52	51	50	49	48	47	45	43	41
45	45	45	54	54	53	53	53	52	52	51	50	49	48	47	45	43	41	38
45	45	54	54	53	53	53	52	52	51	50	49	48	47	45	43	41	38	33
46	54	54	53	53	53	52	51	51	50	49	48	47	45	43	41	38	33	27
54	54	53	53	53	52	51	51	50	49	48	47	45	43	41	38	33	27	7

TABLE A-12

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

6	20	24	27	29	30	31	32	33	33	34	34	34	34	35	35	35	35	35
20	24	27	29	30	31	32	33	33	34	34	34	34	35	35	35	35	35	37
25	27	29	30	31	32	33	33	34	34	34	34	35	35	35	35	35	37	37
27	29	31	31	32	33	33	34	34	34	34	35	35	35	35	35	37	37	37
29	31	32	32	33	33	34	34	34	35	35	35	35	35	35	37	37	37	37
31	32	32	33	33	34	34	34	35	35	35	35	35	35	37	37	37	37	37
32	33	33	34	34	34	34	35	35	35	35	35	35	36	36	36	36	36	36
33	33	34	34	34	35	35	35	35	35	35	35	36	36	36	36	36	36	36
33	34	34	34	35	35	35	35	35	35	35	36	36	36	36	36	36	36	36
34	34	34	35	35	35	35	35	35	36	36	36	36	36	36	35	35	35	35
34	35	35	35	35	35	35	35	36	35	35	35	35	35	35	35	35	35	35
35	35	35	35	35	35	36	36	35	35	35	35	35	35	35	35	35	34	34
35	35	35	35	36	36	36	35	35	35	35	35	35	35	34	34	34	34	34
35	35	36	36	36	36	35	35	35	35	35	35	34	34	34	34	34	33	33
36	36	36	36	36	35	35	35	35	35	34	34	34	34	34	33	33	33	32
36	36	36	36	35	35	35	34	34	34	34	34	34	33	33	33	32	32	31
36	36	36	35	35	34	34	34	34	34	34	34	33	33	33	32	31	31	29
36	36	35	34	34	34	34	34	34	34	33	33	33	32	32	31	30	29	27
36	34	34	34	34	34	34	34	34	33	33	33	32	32	31	30	29	27	24
34	34	34	34	34	34	34	34	33	33	33	32	32	31	30	29	27	24	7
6	22	26	29	31	32	33	34	35	35	36	36	36	37	37	37	37	37	37
22	26	29	31	32	33	34	35	35	36	36	36	37	37	37	37	37	37	43
26	29	31	32	33	34	35	35	36	36	36	37	37	37	37	37	37	43	43
29	31	32	33	34	35	35	36	36	36	37	37	37	37	37	37	42	42	42
31	33	34	34	35	35	36	36	36	37	37	37	37	37	37	42	42	42	42
33	34	34	35	36	36	36	37	37	37	37	37	37	37	42	42	42	42	42
34	35	35	36	36	36	37	37	37	37	37	37	38	42	42	42	42	42	41
35	35	36	36	36	37	37	37	37	37	37	38	41	41	41	41	41	41	41
35	36	36	36	37	37	37	37	37	38	38	41	41	41	41	41	41	41	41
36	36	37	37	37	37	37	38	38	38	41	41	41	41	41	41	41	41	40
36	37	37	37	37	37	38	38	38	41	41	41	41	41	40	40	40	40	40
37	37	37	37	38	38	38	38	41	41	41	40	40	40	40	40	40	40	39
37	37	38	38	38	38	38	40	40	40	40	40	40	40	40	40	39	39	39
37	38	38	38	38	38	40	40	40	40	40	40	40	40	39	39	39	38	38
38	38	38	38	38	40	40	40	40	40	40	40	39	39	39	39	38	38	37
38	38	38	38	40	40	40	40	40	40	39	39	39	39	38	38	37	37	36
38	38	38	40	40	40	40	40	39	39	39	39	39	38	38	37	36	35	34
38	38	40	40	40	40	39	39	39	39	39	38	38	38	37	36	35	34	32
38	40	40	40	40	39	39	39	39	39	38	38	37	37	36	35	34	31	28
40	40	40	40	39	39	39	39	39	38	38	37	37	36	35	34	31	28	8
7	23	28	31	33	34	35	36	37	37	38	38	39	39	39	39	39	40	40
23	28	31	33	34	35	36	37	37	38	38	39	39	39	39	39	40	40	48
28	31	33	34	35	36	37	37	38	38	39	39	39	39	39	40	40	48	48
31	33	34	36	36	37	38	38	38	39	39	39	39	39	40	40	48	48	48
33	35	36	36	37	38	38	38	39	39	39	39	39	40	40	47	47	47	47
35	36	36	37	38	38	38	39	39	39	39	40	40	40	47	47	47	47	47
36	37	37	38	38	38	39	39	39	39	40	40	40	47	47	47	47	47	47
37	37	38	38	39	39	39	39	39	40	40	40	47	47	47	47	47	47	46
37	38	38	39	39	39	39	40	40	40	40	47	47	47	46	46	46	46	46
38	38	39	39	39	39	40	40	40	40	46	46	46	46	46	46	46	46	46

TABLE A-12 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

39	39	39	39	40	40	40	40	40	46	46	46	46	46	46	46	46	45	45
39	39	39	40	40	40	40	40	46	46	46	46	46	46	45	45	45	45	44
39	40	40	40	40	40	40	46	46	46	46	46	45	45	45	45	45	44	44
40	40	40	40	40	40	46	46	46	46	45	45	45	45	45	44	44	44	43
40	40	40	40	40	46	46	46	45	45	45	45	45	44	44	44	43	43	42
40	40	40	40	46	46	45	45	45	45	45	45	44	44	44	43	42	42	41
40	40	41	46	45	45	45	45	45	45	44	44	44	43	43	42	41	40	39
41	41	45	45	45	45	45	45	45	44	44	44	43	43	42	41	40	39	36
41	45	45	45	45	45	45	45	44	44	44	43	43	42	41	40	38	36	32
45	45	45	45	45	45	45	44	44	44	43	43	42	41	40	38	36	32	10
7	25	30	33	35	36	37	38	39	40	40	41	41	41	41	42	42	42	42
25	30	33	35	36	38	38	39	40	40	41	41	41	41	42	42	42	42	53
30	33	35	36	38	38	39	40	40	41	41	41	41	42	42	42	42	53	53
33	35	36	38	38	39	40	40	41	41	41	41	42	42	42	42	53	53	53
35	37	38	39	39	40	40	41	41	41	41	42	42	42	42	53	53	53	53
37	38	39	39	40	40	41	41	41	41	42	42	42	42	53	53	53	52	52
38	39	39	40	40	41	41	41	42	42	42	42	42	53	52	52	52	52	52
39	39	40	40	41	41	41	42	42	42	42	42	52	52	52	52	52	52	52
39	40	40	41	41	41	42	42	42	42	42	52	52	52	52	52	52	51	51
40	41	41	41	41	42	42	42	42	42	52	52	52	52	52	51	51	51	51
41	41	41	42	42	42	42	42	42	52	52	52	52	51	51	51	51	51	50
41	41	42	42	42	42	42	42	52	52	52	51	51	51	51	51	50	50	50
41	42	42	42	42	42	43	52	52	51	51	51	51	51	51	50	50	49	49
42	42	42	42	42	43	52	52	51	51	51	51	51	50	50	50	49	49	48
42	42	42	43	43	52	51	51	51	51	51	51	50	50	50	49	49	48	47
42	42	43	43	51	51	51	51	51	51	50	50	50	49	49	48	48	47	45
42	43	43	51	51	51	51	51	51	50	50	50	49	49	48	47	47	45	43
43	43	51	51	51	51	51	51	50	50	50	49	49	48	47	46	45	43	41
43	51	51	51	51	51	50	50	50	50	49	49	48	47	46	45	43	40	36
51	51	51	51	51	50	50	50	50	49	49	48	47	46	45	43	40	36	11
8	26	31	35	37	38	40	41	41	42	42	43	43	44	44	44	44	44	45
26	31	35	37	38	40	41	41	42	42	43	43	44	44	44	44	44	45	59
31	35	37	38	40	41	41	42	42	43	43	44	44	44	44	44	45	58	58
35	37	38	40	41	41	42	42	43	43	44	44	44	44	44	45	58	58	58
37	38	40	41	41	42	42	43	43	44	44	44	44	44	45	58	58	58	58
39	40	41	41	42	43	43	43	44	44	44	44	44	45	58	58	58	58	58
40	41	41	42	43	43	43	44	44	44	44	45	45	58	58	58	58	57	57
41	41	42	43	43	43	44	44	44	44	45	45	58	58	58	58	57	57	57
42	42	43	43	43	44	44	44	44	45	45	58	58	58	57	57	57	57	56
42	43	43	43	44	44	44	44	45	45	58	58	58	57	57	57	57	56	56
43	43	43	44	44	44	44	45	45	58	58	57	57	57	57	57	56	56	55
43	44	44	44	44	44	45	45	58	58	57	57	57	57	56	56	56	55	55
44	44	44	44	45	45	45	58	58	57	57	57	57	56	56	56	55	55	54
44	44	44	45	45	45	58	57	57	57	57	57	56	56	56	55	55	54	53
44	44	45	45	45	58	57	57	57	57	57	56	56	56	55	54	54	53	52
44	45	45	45	58	57	57	57	57	56	56	56	55	55	54	54	53	52	50
45	45	45	57	57	57	57	57	56	56	56	55	55	54	54	53	52	50	48
45	45	57	57	57	57	57	56	56	56	55	55	54	54	53	52	50	48	45
45	57	57	57	57	57	56	56	56	55	55	54	54	53	52	50	48	45	40
57	57	57	57	57	56	56	56	55	55	54	54	53	52	50	48	45	40	12

TABLE A-13

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

5	19	23	26	28	29	30	31	32	32	33	33	34	34	34	34	34	35	35
19	23	26	28	29	30	31	32	32	33	33	34	34	34	34	34	35	35	37
23	26	28	29	30	31	32	33	33	33	34	34	34	34	34	35	35	37	37
26	28	29	31	31	32	33	33	33	34	34	34	34	34	35	35	37	37	37
28	30	31	31	32	33	33	33	34	34	34	34	34	35	35	36	36	36	36
30	31	32	32	33	33	33	34	34	34	34	35	35	35	36	36	36	36	36
31	32	32	33	33	34	34	34	34	34	35	35	35	36	36	36	36	36	36
32	32	33	33	34	34	34	34	35	35	35	35	36	36	36	36	36	35	35
32	33	33	34	34	34	34	35	35	35	35	36	36	35	35	35	35	35	35
33	34	34	34	34	35	35	35	35	35	35	35	35	35	35	35	35	35	34
34	34	34	34	35	35	35	35	35	35	35	35	35	35	35	35	34	34	34
34	34	35	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	33
34	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	33	33	33
35	35	35	35	35	35	35	35	35	34	34	34	34	34	33	33	33	32	32
35	35	35	35	35	35	34	34	34	34	34	34	34	33	33	33	32	31	31
35	35	35	36	34	34	34	34	34	34	34	33	33	33	32	32	31	30	29
35	36	36	34	34	34	34	34	34	33	33	33	33	32	32	31	30	29	28
36	36	34	34	34	34	34	34	33	33	33	32	32	31	31	30	29	27	25
36	34	34	34	34	34	34	33	33	33	32	32	31	31	30	29	27	25	22
34	34	34	34	34	34	33	33	33	32	32	31	31	30	29	27	25	22	6
6	20	25	28	30	31	32	33	34	34	35	35	36	36	36	36	36	37	37
20	25	28	30	31	32	33	34	34	35	35	36	36	36	36	36	37	37	42
25	28	30	31	32	33	34	34	35	35	36	36	36	36	37	37	37	42	42
28	30	31	32	33	34	35	35	35	36	36	36	36	37	37	37	42	42	42
30	31	33	33	34	35	35	35	36	36	36	36	37	37	37	42	42	41	41
32	33	33	34	35	35	35	36	36	36	36	37	37	37	41	41	41	41	41
33	34	34	35	35	36	36	36	36	37	37	37	37	41	41	41	41	41	41
34	34	35	35	36	36	36	36	37	37	37	37	41	41	41	41	41	41	40
34	35	35	36	36	36	36	37	37	37	37	41	41	41	40	40	40	40	40
35	35	36	36	36	37	37	37	37	37	41	40	40	40	40	40	40	40	39
36	36	36	36	37	37	37	37	37	40	40	40	40	40	40	40	39	39	39
36	36	37	37	37	37	37	37	40	40	40	40	40	40	39	39	39	39	38
36	37	37	37	37	37	37	40	40	40	40	40	39	39	39	39	38	38	37
37	37	37	37	37	37	40	40	40	40	39	39	39	39	38	38	38	37	36
37	37	37	37	38	40	40	40	39	39	39	39	39	38	38	37	37	36	35
37	37	38	38	40	40	39	39	39	39	39	38	38	38	37	37	36	35	34
38	38	38	40	39	39	39	39	39	39	38	38	38	37	36	36	35	34	32
38	38	39	39	39	39	39	39	38	38	38	37	37	36	36	35	33	32	29
38	39	39	39	39	39	39	38	38	38	37	37	36	35	35	33	32	29	25
39	39	39	39	39	39	38	38	38	37	37	36	35	35	33	31	29	25	7
6	21	26	29	31	33	34	35	36	37	37	37	38	38	38	38	39	39	39
21	26	29	32	33	34	35	36	37	37	37	38	38	38	38	39	39	39	47
26	29	32	33	34	35	36	37	37	37	38	38	38	39	39	39	39	47	47
29	32	33	34	35	36	37	37	37	38	38	38	39	39	39	39	47	47	47
32	33	34	35	36	37	37	38	38	38	38	39	39	39	39	47	47	47	46
33	35	35	36	37	37	38	38	38	38	39	39	39	39	47	46	46	46	46
35	36	36	37	37	38	38	38	38	39	39	39	39	46	46	46	46	46	46
36	36	37	37	38	38	38	39	39	39	39	39	46	46	46	46	46	46	45
36	37	37	38	38	38	39	39	39	39	39	46	46	46	46	46	45	45	45
37	37	38	38	38	39	39	39	39	39	46	46	46	45	45	45	45	45	44

TABLE A-13 (CONT.)

TECH 6 I/M CREDITS ARE FOR THE 83+ LDGVS 57.9% CLC; 5.3% CTB;& 36.8% OLC

38	38	38	39	39	39	39	39	39	46	46	45	45	45	45	45	44	44	44
38	38	39	39	39	39	39	39	46	45	45	45	45	45	45	44	44	44	43
38	39	39	39	39	39	40	45	45	45	45	45	45	44	44	44	43	43	42
39	39	39	39	40	40	45	45	45	45	45	44	44	44	44	43	43	42	41
39	39	39	40	40	45	45	45	45	44	44	44	44	43	43	42	42	41	40
39	40	40	40	45	45	45	45	44	44	44	44	43	43	42	42	41	40	38
40	40	40	45	45	45	44	44	44	44	43	43	43	42	41	41	40	38	36
40	40	45	45	45	44	44	44	44	43	43	43	42	41	40	39	38	36	33
40	45	45	45	44	44	44	44	43	43	42	42	41	40	39	38	36	33	29
45	45	45	44	44	44	44	43	43	42	42	41	40	39	38	36	33	29	8
6	23	28	31	33	35	36	37	38	39	39	40	40	40	41	41	41	41	41
23	28	31	33	35	36	37	38	39	39	40	40	40	41	41	41	41	41	52
28	31	33	35	36	37	38	39	39	40	40	40	41	41	41	41	41	52	52
31	33	35	36	37	38	39	39	40	40	40	41	41	41	41	41	52	52	52
33	35	36	37	38	39	39	40	40	40	41	41	41	41	41	52	52	52	52
35	36	37	38	39	39	40	40	40	41	41	41	41	41	52	52	52	51	51
36	37	38	39	39	40	40	40	41	41	41	41	41	52	52	52	51	51	51
38	38	39	39	40	40	40	41	41	41	41	41	52	51	51	51	51	51	50
38	39	39	40	40	41	41	41	41	41	42	51	51	51	51	51	50	50	50
39	40	40	40	41	41	41	41	41	42	51	51	51	51	51	50	50	50	49
40	40	40	41	41	41	41	41	42	51	51	51	51	50	50	50	50	49	49
40	40	41	41	41	41	42	42	51	51	51	50	50	50	50	49	49	49	48
40	41	41	41	41	42	42	51	51	51	50	50	50	50	49	49	48	48	47
41	41	41	42	42	42	51	51	50	50	50	50	49	49	49	48	48	47	46
41	41	42	42	42	51	51	50	50	50	50	49	49	49	48	47	47	46	45
41	42	42	42	51	50	50	50	50	50	49	49	48	48	47	47	46	44	43
42	42	42	51	50	50	50	50	49	49	49	48	48	47	46	45	44	43	41
42	42	50	50	50	50	50	49	49	49	48	48	47	46	45	44	43	40	37
42	50	50	50	50	50	49	49	49	48	48	47	46	45	44	42	40	37	32
50	50	50	50	50	49	49	49	48	48	47	46	45	44	42	40	37	32	9
7	24	29	33	35	37	38	39	40	41	41	42	42	43	43	43	43	44	44
24	29	33	35	37	38	39	40	41	41	42	42	43	43	43	43	44	44	57
29	33	35	37	38	39	40	41	41	42	42	43	43	43	43	44	44	57	57
33	35	37	38	39	40	41	41	42	42	43	43	43	43	44	44	57	57	57
35	37	38	39	40	41	41	42	42	43	43	43	43	44	44	57	57	57	57
37	38	39	40	41	41	42	42	43	43	43	43	44	44	57	57	57	57	56
38	39	40	41	41	42	42	43	43	43	43	44	44	57	57	57	56	56	56
39	40	41	41	42	42	43	43	43	43	44	44	57	57	57	56	56	56	55
40	41	41	42	42	43	43	43	43	44	44	57	57	56	56	56	56	55	55
41	42	42	42	43	43	43	44	44	44	57	57	56	56	56	56	55	55	54
42	42	42	43	43	43	44	44	44	57	57	56	56	56	55	55	55	54	54
42	42	43	43	43	44	44	44	57	56	56	56	56	55	55	55	54	54	53
43	43	43	43	44	44	44	57	56	56	56	56	55	55	55	54	53	53	52
43	43	43	44	44	44	57	56	56	56	56	55	55	54	54	53	53	52	51
43	43	44	44	44	56	56	56	56	56	55	55	54	54	53	53	52	51	49
44	44	44	44	56	56	56	56	55	55	55	54	54	53	52	52	51	49	47
44	44	44	56	56	56	56	55	55	55	54	54	53	52	52	50	49	47	45
44	44	56	56	56	56	55	55	55	54	54	53	52	51	50	49	47	45	41
44	56	56	56	56	55	55	55	54	54	53	52	51	50	49	47	45	41	36
56	56	56	56	55	55	55	54	54	53	52	51	50	49	47	45	41	36	10

Appendix B

Adjusted 1979 Non-Methane Hydrocarbon Emission Inventory

TOTAL 1979 LOW ALTITUDE NMHC EMISSIONS INVENTORY
(1000 TONS/YEAR)

COUNTY	LDGV	LDGT	HDGV	HDDV	OFF-HIGH	STATION	POINT	MOBILE SOURCE TOTAL	STATIONARY SOURCE TOTAL	GRAND TOTAL
NEW YORK,NY-NJ	272.3	51.7	52.4	8.2	32.7	25.3	894.4	417.3	919.7	1337.0
	(20.4)	(3.9)	(3.9)	(0.6)	(2.4)	(1.9)	(66.9)	(31.2)	(68.8)	(100.0)
PHILADELPHIA	105.0	20.1	18.6	5.4	15.8	7.8	361.7	164.9	369.5	534.4
	(19.6)	(3.8)	(3.5)	(1.0)	(3.0)	(1.5)	(67.7)	(30.9)	(69.1)	(100.0)
WASHINGTON,DC	58.1	10.7	7.4	2.0	11.5	2.3	50.9	89.7	53.2	142.9
	(40.7)	(7.5)	(5.2)	(1.4)	(8.0)	(1.6)	(35.6)	(62.8)	(37.2)	(100.0)
LOUISVILLE,KY	21.4	4.0	1.4	0.9	3.1	2.6	63.5	30.8	66.1	96.9
	(22.1)	(4.1)	(1.4)	(0.9)	(3.2)	(2.7)	(65.5)	(31.8)	(68.2)	(100.0)
CINCINNATI	36.2	6.5	5.2	1.8	5.1	5.7	87.8	54.8	93.5	148.3
	(24.4)	(4.4)	(3.5)	(1.2)	(3.4)	(3.8)	(59.2)	(37.0)	(63.0)	(100.0)
BALTIMORE	44.9	8.5	11.9	1.4	9.5	2.4	88.1	76.2	90.5	166.7
	(26.9)	(5.1)	(7.1)	(0.8)	(5.7)	(1.4)	(52.8)	(45.7)	(54.3)	(100.0)
WORCESTER,MA	16.1	3.1	2.1	0.4	2.3	4.3	33.8	24.0	38.1	62.1
	(25.9)	(5.0)	(3.4)	(0.6)	(3.7)	(6.9)	(54.4)	(38.6)	(61.4)	(100.0)
BOSTON	62.0	11.7	10.3	1.5	7.0	4.8	104.3	92.5	109.1	201.6
	(30.8)	(5.8)	(5.1)	(0.7)	(3.5)	(2.4)	(51.7)	(45.9)	(54.1)	(100.0)
PROVIDENCE	39.7	7.7	8.1	0.9	8.0	7.1	87.5	64.4	94.6	159.0
	(25.0)	(4.8)	(5.1)	(0.6)	(5.0)	(4.5)	(55.0)	(40.5)	(59.5)	(100.0)
ALLENTOWN,PA	47.2	9.1	5.4	2.4	8.4	4.5	104.6	72.5	109.1	181.6
	(26.0)	(5.0)	(3.0)	(1.3)	(4.6)	(2.5)	(57.6)	(39.9)	(60.1)	(100.0)

TOTAL 1979 LOW ALTITUDE NMHC EMISSIONS INVENTORY
(1000 TONS/YEAR)

COUNTY	LDGV	LDGT	HDGV	HDDV	OFF-HIGH	STATION	POINT	MOBILE SOURCE TOTAL	STATIONARY SOURCE TOTAL	GRAND TOTAL
CLEVELAND	72.2	13.0	9.5	3.7	9.1	10.8	184.3	107.5	195.1	302.6
	(23.9)	(4.3)	(3.1)	(1.2)	(3.0)	(3.6)	(60.9)	(35.5)	(64.5)	(100.0)
PITTSBURGH	48.9	9.4	3.9	3.0	8.6	5.7	96.1	73.8	101.8	175.6
	(27.8)	(5.4)	(2.2)	(1.7)	(4.9)	(3.2)	(54.7)	(42.0)	(58.0)	(100.0)
NASHVILLE	28.6	5.5	2.9	2.3	7.9	6.0	65.7	47.2	71.7	118.9
	(24.1)	(4.6)	(2.4)	(1.9)	(6.6)	(5.0)	(55.3)	(39.7)	(60.3)	(100.0)
HOUSTON	67.9	12.7	6.9	3.0	22.7	7.5	282.3	113.2	289.8	403.0
	(16.8)	(3.2)	(1.7)	(0.7)	(5.6)	(1.9)	(70.0)	(28.1)	(71.9)	(100.0)
HARTFORD	52.4	9.6	6.7	1.7	7.6	7.0	132.4	78.0	139.4	217.4
	(24.1)	(4.4)	(3.1)	(0.8)	(3.5)	(3.2)	(60.9)	(35.9)	(64.1)	(100.0)
CHICAGO	138.7	26.3	18.5	8.1	26.0	13.2	581.0	217.6	594.2	811.8
	(17.1)	(3.2)	(2.3)	(1.0)	(3.2)	(1.6)	(71.6)	(26.8)	(73.2)	(100.0)
ST.LOUIS	63.8	11.9	9.0	4.5	11.8	5.6	192.5	101.0	198.1	299.1
	(21.3)	(4.0)	(3.0)	(1.5)	(3.9)	(1.9)	(64.4)	(33.8)	(66.2)	(100.0)
DETROIT	94.7	17.7	15.3	3.6	10.8	15.3	235.4	142.1	250.7	392.8
	(24.1)	(4.5)	(3.9)	(0.9)	(2.7)	(3.9)	(59.9)	(36.2)	(63.8)	(100.0)
PORTLAND,OR	60.0	11.1	10.6	3.5	13.3	36.7	118.5	98.5	155.2	253.7
	(23.6)	(4.4)	(4.2)	(1.4)	(5.2)	(14.5)	(46.7)	(38.8)	(61.2)	(100.0)
RICHMOND,VA	15.9	2.9	3.4	1.1	3.6	1.9	62.4	26.9	64.3	91.2
	(17.4)	(3.2)	(3.7)	(1.2)	(3.9)	(2.1)	(68.4)	(29.5)	(70.5)	(100.0)

TOTAL 1979 LOW ALTITUDE NMHC EMISSIONS INVENTORY
(1000 TONS/YEAR)

COUNTY	LDGV	LDGT	HDGV	HDDV	OFF-HIGH	STATION	POINT	MOBILE SOURCE TOTAL	STATIONARY SOURCE TOTAL	GRAND TOTAL
SEATTLE	68.7	12.3	3.7	1.1	11.5	8.9	77.7	97.3	86.6	183.9
	(37.4)	(6.7)	(2.0)	(0.6)	(6.3)	(4.8)	(42.3)	(52.9)	(47.1)	(100.0)
MILWAUKEE	5.0	1.0	1.5	0.6	5.7	8.4	106.9	13.8	115.3	129.1
	(3.9)	(0.8)	(1.2)	(0.5)	(4.4)	(6.5)	(82.8)	(10.7)	(89.3)	(100.0)
TOTAL	1419.7	266.5	214.7	61.1	242.0	193.8	4011.8	2204.0	4205.6	6409.6
	(22.1)	(4.2)	(3.3)	(1.0)	(3.8)	(3.0)	(62.6)	(34.4)	(65.6)	(100.0)

TOTAL 1979 HIGH ALTITUDE NMHC EMISSIONS INVENTORY
(1000 TONS/YEAR)

COUNTY	LDGV	LDGT	HDGV	HDDV	OFF-HIGH	STATION	POINT	MOBILE SOURCE TOTAL	STATIONARY SOURCE TOTAL	GRAND TOTAL
DENVER	40.3	9.1	21.3	2.9	7.6	4.2	50.8	81.2	55.0	136.2
	(29.6)	(6.7)	(15.6)	(2.1)	(5.6)	(3.1)	(37.3)	(59.6)	(40.4)	(100.0)
SALT LAKE CITY	25.1	5.7	6.7	2.9	6.9	1.0	32.9	47.3	33.9	81.2
	(30.9)	(7.0)	(8.3)	(3.6)	(8.5)	(1.2)	(40.5)	(58.3)	(41.7)	(100.0)
TOTAL	65.4	14.8	28.0	5.8	14.5	5.2	83.7	128.5	88.9	217.4
	(30.1)	(6.8)	(12.9)	(2.7)	(6.7)	(2.4)	(38.5)	(59.1)	(40.9)	(100.0)